SPECTRUM®

Software Release Notice for 5.0rev1 CS2 and MMS2

Caution

The CS2 portion of the CD includes SPECTRUM core updates. The MMS2 portion includes new and updated versions of management modules. Once the CS2 software has been installed, you MUST install the MMS2 versions of any management modules previously installed in your database.

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Chapter 1

Introduction

This chapter provides an overview of this document and the CS2and MMS2 software.

Purpose of This Document

This Software Release Notice (SRN) accompanies the CD containing the Core Supplement (CS2) and Management Module Supplement (MMS2) software for SPECTRUM Enterprise Manager 5.0rev1. The SRN is also available on Cabletron's Web site at: **`http://www.cabletron.com/support/`**.

This SRN performs the following functions:

- Describes the purpose of this software release.

  See *Purpose of CS2 and MMS2* on Page 1-2.

- Lists the SunOS patches required to run SPECTRUM 5.0rev1 on the Solaris 2.7 operating system.

  See *New Feature, Solaris 2.7 Support* on Page 1-3.

- Provides installation instructions for CS2 and MMS2.

  See *Installation* on Page 2-1.

- Describes what previously released software is being superseded.

  See Chapter 5.

- Describes anomalies (with solutions or workarounds when available) that have not been previously documented.

  See *CS2 Known Anomalies* on Page 3-3 and *MMS2 Known Anomalies* on Page 4-4.

- Describes new problem resolutions incorporated in CS2 and MMS2.

  See *Problems Resolved in CS2* on Page 3-2 and *Problems Resolved in MMS2* on Page 4-2.

Purpose of CS2 and MMS2

The CS2 and MMS2 software portions of the CD perform the following functions for SPECTRUM 5.0rev1.

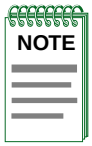
- The CS2 software provides an interim solution to problems and anomalies associated with SPECTRUM 5.0rev1. It consolidates previous off-cycle releases (Patches) and provides solutions to some problems not previously addressed. As a Core Supplement release, CS2 provides solutions to issues affecting the SPECTRUM Core, the Core Management Modules, and such SPECTRUM applications as ArchMgr and Reports. CS2 does not provide solutions to device management issues associated with the management modules. Such issues are addressed in the MMS2 software.

  See Chapter 3, *CS2 Software Characteristics*, for details on the CS2 software.

  See Chapter 6, *Files Shipped With CS2*, for a list of the files shipped with CS2.

- The MMS2 software provides the SPECTRUM 5.0rev1 management modules included in MMS1, some of which have been updated, plus additional management modules produced since the release of MMS1. The MMS2 software is installed selectively after installing CS2; in other words, you *must* install those management modules that have been previously installed in your SPECTRUM database and you *should* install any additional management modules that you have purchased.

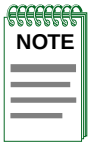
  See Chapter 4, *MMS2 Software Characteristics*, for details on the MMS2 software and listings of the management modules included in MMS2.



As a minimum, all of the management modules in your current SPECTRUM database must be re-installed from the MMS2 software in order for your SPECTRUM 5.0rev1 system to operate properly. Installation of MMS2 requires a Key provided with the CD. This Key ensures the extraction of the management modules you have purchased.

New Feature, Solaris 2.7 Support

The CS2/MMS2 software provides SPECTRUM 5.0rev1 with support for the Solaris 2.7 operating system; however, you must install the appropriate SunOS patches for SPECTRUM to operate properly. A complete list of the patches is provided in Table 1-1. The specific patches to be applied depend upon your system configuration. For example, 106144-08, the Elite3D AFB Graphics Patch, only applies if your system contains an Elite3D graphics card.



Attempting to apply an unnecessary patch will not do any harm, since the Sun patch installation software detects whether a particular patch is appropriate by verifying that the package it pertains to is currently installed on your system.

Table 1-1. SunOS Patches Required for Solaris 2.7 Operation

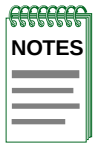
Patch #	Description
106144-08	SunOS 5.7: Elite3D AFB Graphics Patch
106145-07	SunOS 5.7: Creator 7 FFB Graphics Patch
106146-07	SunOS 5.7: M64 Graphics Patch
106147-04	SunOS 5.7: VIS/XIL Graphics Patch
106148-05	SunOS 5.7: XFB Graphics Patch
106541-05	SunOS 5.7: Kernel update Patch
106944-02	SunOS 5.7: /kernel/fs/fifofs and /kernel/fs/sparcv9/fifofs Patch
106980-05	SunOS 5.7: libthread Patch
107078-10	OpenWindows 3.6.1: Xsun Patch
107117-04	SunOS 5.7: libbsm Patch
107359-01	SunOS 5.7: Patch for SPARCompiler Binary Compatibility
107448-01	SunOS 5.7: /usr/lib/fs/cachefs/cachefsd Patch
107450-01	SunOS 5.7: /platform/SUNW,Ultra-Enterprise-10000/lib/cvcd Patch
107451-01	SunOS 5.7: /usr/sbin/cron Patch
107458-02	SunOS 5.7: sd & ssd drivers Patch
107709-02	SunOS 5.7: libssasnmp/libssagent/snmpdx/mibiisa Patch
107716-02	SunOS 5.7: PGX32 Graphics Patch

Chapter 2

Installation

This chapter describes how to install the CS2and MMS2 software.

Although the installation process is identical to that used to install the previously released CS1 and MMS1 software, we urge you to completely read the instructions in this chapter before proceeding.



1. If you are going to run SPECTRUM 5.0rev1 on the Solaris 2.7 operating system, ensure that the appropriate SunOS patches are installed on your system . (See New Feature, Solaris 2.7 Support on Page 1-3 for a list of the SunOS patches.) SunOS patches are not included in CS2/MMS2.

2. CS2 must be installed in its entirety (prior to installing any MMS2 software) on all systems containing a SpectroSERVER or SpectroGRAPH. It is not necessary for CS1, MMS1, or any of the patches listed in Chapter 5, Software Superseded by CS2/MMS2, to have been installed on your SPECTRUM 5.0rev1 system prior to installing CS2 and MMS2.

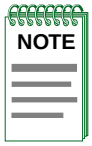
Pre-Installation Instructions

Before invoking the Install program, be sure to save your current `CsStdMenu` file by changing directory to <*SPECTRUM Home*>/`app-defaults` and copying `CsStdMenu` to `CsStdMenu.ori` at the command line. (CS2 includes a new `CsStdMenu` file, to which you may wish to transfer any customized settings contained in your current `CsStdMenu` file.)

Before invoking the Install program, be sure to save your current `dtxscript` file by changing directory to <*SPECTRUM Home*>/`SG-Tools` and copying `dtxscript` to `dtxscript.ori` at the command line. (CS2 includes a new `dtxscript` file, to which you may wish to transfer any customized settings contained in your current `dtxscript` file.)

Before invoking the Install program, make sure that all SPECTRUM processes have been shut down, including SpectroGRAPH, SpectroSERVER,

ArchMgr, processd, and the Control Panel itself. (ArchMgr should be shut down using the Control Panel's Control menu.)

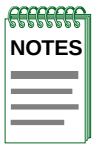


On Windows NT, extraction of the files `LocServer.exe` *and* `gzip.exe` *from the CS2 vtape will fail. This is a result of a problem with NT permissions. To ensure successful extraction of these files, proceed as follows:*

1. Using Microsoft Explorer, navigate to the `LS` *directory and rename the file* `LocServer.exe` *as* `LocServer_orig.exe`.
2. Also using Microsoft Explorer, navigate to the `Install-Tools` *directory and rename the file* `gzip.exe` *as* `gzip_orig.exe`.

Installing CS2

The following steps are required to manually install the CS2 software.

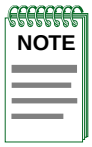


1. Refer to the ***SPECTRUM Installation Guide*** *for instructions on installing from a local or remote CD-ROM Drive.*

2. For Windows NT, use the SpectroSHELL by selecting it from the SPECTRUM Programs folder.

1. Change directory to <*full path of the vtape_CS2 directory*> (i.e {CD-ROM Drive directory}/`cs2/`{platform}/`vtape_CS2`) to verify the path.
2. Change directory to the <*SPECTRUM Home*> directory.
3. Extract the contents of the release file labeled vtape.0 by typing:

   `tar xvf <full path of the vtape_CS2 directory>/vtape.0`
4. Bring up the Install GUI by typing: **`./Install`**.



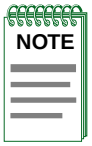
If the custom installation mode was used to install the 5.0rev1 release, then it is necessary to install CS2 in the custom installation mode. All user responses to custom script queries should match those given during the 5.0rev1 installation.

5. In the Installation Configuration window, enter the full path of the vtape_CS2 directory in the **Source Directory** field.

Do not manually deselect components via the Component Selection window. The Install program will automatically select and install those CS2 components that are applicable to your current SPECTRUM installation. Manual deselection of components may result in installation failure and/or incorrect product installation. You may, however, do SpectroSERVER-only or SpectroGRAPH-only installations.

6. Enter the user name of the person performing the installation in the **Target Ownership** field. This should be a login name other than **root** or **Administrator**.

7. Click **OK** to install.



If you install the CS2 portion of the CD and get any of the following errors while linking the SpectroSERVER, you need to install the MMS2 portion of the CD:

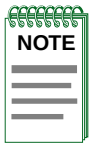
```
Undefined                   first referenced
    symbol                      in file
__0oKCsIHRtrSumctR6NCsMTypeHandleP6NCsAttrValListTCRC6LCsRel
HandleUl Cs8021QMI.o
__0fMCsIHIfConfigQinterface_changeRC6NCsModelHandle
ih.a(CsIHNbldrIf.o)
__0fTCsIHDeviceIsolationQassert_conditionRC6NCsModelHandleUlNCC
ih.a(CsIHChsIsol.o)
__0fMCsIHRPAMaintQcheck_against_PARC6NCsModelHandleP6ICsIPAdd
r ih.a(LbIHMPPALMn.o)
__0oKCsIHIfStatctR6NCsMTypeHandleUlNDCP6Iadmin_op
CsATMIfPtMI.o
ld: fatal: Symbol referencing errors. No output written to SpectroSERVER
   /usr/ccs/bin/nm: SpectroSERVER: No such file or directory

**^G Error during Link of SpectroSERVER
   chown: SpectroSERVER: No such file or directory
   chmod: WARNING: can't access SpectroSERVER
**^G Error during chmod u+s of SpectroSERVER
```

CS2 Post-Installation Instructions

Once you have completed the CS2 installation, perform the following steps to verify and modify your files as necessary.

1. Change directory to <*SPECTRUM Home*>`/app-defaults` and compare the file `CsStdMenu` with `CsStdMenu.ori`, the file you saved prior to this installation. Edit `CsStdMenu` to restore any customized settings you may have had in `CsStdMenu.ori`.
2. Change directory to <*SPECTRUM Home*>`/SG-Tools` and compare the file `dtxscript` with `dtxscript.ori`, the file you saved prior to this installation. Edit `dtxscript` to restore any customized settings you may have had in `dtxscript.ori`.
3. If there is no need to install MMS2 (see Note below), bring up the Control Panel and start the SpectroSERVER and/or SpectroGRAPH; otherwise, proceed with the installation of MMS2.



You need not install any portion of MMS2 if (and only if) your SPECTRUM 5.0rev1 database does not contain a management module included in MMS2. This will NOT be the case for most installations. See Management Modules Included in MMS2, starting on Page 4-8.

Installing MMS2

You *must* install the management modules included as part of MMS2 that are currently installed in your SPECTRUM 5.0rev1 database. Also, you *should* install any additional management modules that you have purchased. (See *Management Modules Included in MMS2*, starting on Page 4-8.)

The procedure for installing management modules from the MMS2 portion of the CD is the same as the one for installing management modules described in the ***SPECTRUM Installation Guide***, which is available on Cabletron's Web site at **`http://www.cabletron.com/support/manuals/`**.

Chapter 3

CS2 Software Characteristics

This chapter describes the problem resolutions and known anomalies associated with the CS2 software.

General Characteristics

Listed below (in chronological order) are the categories of problem resolutions that are provided by the CS2 (and MMS2) software.

- CS2/MMS2 supersedes all of the off-cycle releases originally superseded by the CS1/MMS1 software (i.e., Patches SPECTRUM_5.0rev1.P01 through SPECTRUM_5.0rev1.P16).

  See the section titled *Patches Originally Superseded by CS1/MMS1*, starting on Page 5-2, for detailed descriptions of these patches.

- CS2/MMS2 supersedes all of the problem resolutions originally incorporated in the CS1/MMS1 software for the first time.

  See the section titled *Other Resolutions Included in CS1/MMS1*, starting on Page 5-6, for descriptions of these items.

- CS2/MMS2 supersedes all of the off-cycle releases since CS1/MMS1 was released (i.e., Patches SPECTRUM_5.0rev1.P17 through SPECTRUM_5.0rev1.P51).

  See the section titled *Patches Issued Since the CS1/MMS1 Release*, starting on Page 5-8, for detailed descriptions of these patches.

- CS2 resolves problems being reported here for the first time.

  See the section titled *Problems Resolved in CS2*, starting on Page 3-2, for descriptions of these items.

This chapter describes known anomalies that are being identified for the first time via this CS2 release. See the section titled *CS2 Known Anomalies*, starting on Page 3-3.

CS2 includes the deliverable files listed in the section titled *Files Shipped With CS2*, starting on Page 6-1.

Problems Resolved in CS2

CS2 provides resolutions for the following problems, which have not been addressed in any previous off-cycle releases.

1. The UpTime attribute in SpectroWATCH formulas has been changed to type **TimeTicks** to avoid wrap-around errors and ensure the accuracy of certain load computations.
2. A new relation now exists for FddiConcentrators to prevent model destruction in the Lost & Found view.
3. processd now auto-restarts your SSAPI applications.
4. The date in the sw_alrm_script is now presented in month/day format.
5. AutoDiscovery now puts WA_Links on a Frame Relay interface, as it did in 4.0rev3/MMS3.
6. The CLI Seek command no longer causes the SpectroSERVER to core dump.
7. An option has been provided giving the SPECTRUM Administrator the ability to allow read-only users to acknowledge alarms.
8. On Solaris 2.7, SpectroGRAPH no longer crashes during Find and in Attribute Browser.
9. The CsDateTime class was modified to ensure that date and time references are in the language and format suitable for your geographic locale.
10. The user Editor now sends *all* common attributes to the server, not just those attributes that are visible to the user.
11. Security string inheritance now propagates correctly, even when some of the intermediate security strings are empty.
12. Watches no longer fail reading some internal attributes.
13. Pingable models now receive Alerts generated from SNMP Traps.
14. Final changes have been made to allow printing of more than one model per page.
15. SPECTRUM Data Export scheduling no longer fails with the message: `Not authorized to use cron`.
16. Cisco 2501s and 7500s modeled as Rtr_Cisco are no longer missing applications and lacking necessary containers.

17. CLI no longer fails to connect from SpectroWatch script.
18. The printer dialog box for the Print-View on NT systems now displays, showing the default printer selected.
19. There is no longer a need to manually update the vendor ID list and vendor Name list before running the Event Configuration Editor.
20. Model types and models are now visible in the Reports UI Statistics and Events pick lists.
21. Components in SPECTRUM 5.0rev1 are no longer being deselected during installation and causing **Install** to fail in the link phase. Using **newtar** instead of **tar** now ensures that **Install** retrieves all components.
22. In the Event view, clicking on the Filter dialog box **Cancel** button now properly restores the last applied model type list.
23. Two attribute IDs that had previously been swapped in the GnSNMPDev Redundancy and Model Reconfiguration Options GIB now accurately match the corresponding field label.
24. In a distributed environment, the Salt tool now shows the model or landscape name for models in remote landscapes.
25. Users can now control at the Gen_IF_Port level whether an interface will alarm in response to a linkDown trap.
26. Patch installation on NT no longer fails with a syntax error message.

CS2 Known Anomalies

The following SPECTRUM 5.0rev1 anomalies are associated with this release of CS2/MMS2.

1. An EPI agent has the ability to send unsolicited messages to the SpectroSERVER that is managing it. An unsolicited message can result in changing the value of a particular attribute if the verb for the message is CsEpiVerbAttrChng.

   Prior to this patch, these attribute changes were logged based on the following criteria only. First, the attribute had to be of the type CsAttrDesc::REAL or CsAttrDesc::INT and second, the logged flag had to be set for the attribute.

   This patch expands the logging functionality. After adding this patch, a new attribute called Log_State will exist as part of the EpiPIf model type and all model types that are derived from EpiPIf. This includes Gen_EPI_Agent and Gen_EPI_Dev.

There are three valid values for the log state attribute, which are:

0 = NO_LOGGING

1 = LOG_ALL_CHANGES

2 = LOG_VALUE_CHANGES_ONLY

When Log_State is 0, no logging is done when an unsolicited message is received. This is important, since the old behavior of logging all INT and REAL changes no longer occurs. When Log_State is 1, logging is done every time a CsEpiVerbAttrChng is received for a given attribute. This is true even if the value of the attribute will not change as a result of processing the CsEpiVerbAttrChng message. When Log_State is 2, logging is done only if handling the unsolicited message results in changing the actual value of the attribute. The default value of Log_State is 0. This means that any code dependent on logging unsolicited attribute value changes must ensure that the models it depends on have Log_State set correctly.

The logging functionality has also been expanded to include changes to CsAttrDesc::TEXT_STRING and CsAttrDesc::OCTET_STRING types.

2. SPECTRUM 5.0.n client applications will not have Trouble Shooter capabilities when connecting to 5.2+ SpectroSERVERs.

3. When you install the CS2 vtape and get any of the following errors while linking the SpectroSERVER, you will need to install MMS2:

```
        Undefined                          first referenced
         symbol                                in file

__0oKCsIHRtrSumctR6NCsMTypeHandleP6NCsAttrValListTCRC6LCsRe
lHandleUl Cs8021QMI.o
__0fMCsIHIfConfigQinterface_changeRC6NCsModelHandle
ih.a(CsIHNbldrIf.o)
__0fTCsIHDeviceIsolationQassert_conditionRC6NCsModelHandleU
lNCC ih.a(CsIHChsIsol.o)
__0fMCsIHRPAMaintQcheck_against_PARC6NCsModelHandleP6ICsIPA
ddr ih.a(LbIHMPPALMn.o)
__0oKCsIHIfStatctR6NCsMTypeHandleUlNDCP6Iadmin_op
CsATMIfPtMI.o
ld: fatal: Symbol referencing errors. No output written to
SpectroSERVER
/usr/ccs/bin/nm: SpectroSERVER: No such file or directory

**^G Error during Link of SpectroSERVER
chown: SpectroSERVER: No such file or directory
chmod: WARNING: can't access SpectroSERVER

**^G Error during chmod u+s of SpectroSERVER
```

4. On Windows NT, extraction of the files **LocServer.exe** and **gzip.exe** from the CS2 vtape will fail. This is a result of a problem with NT permissions. To ensure successful extraction of these files, proceed as follows:

   a. Using Microsoft Explorer, navigate to the **LS** directory and rename the file **LocServer.exe** as **LocServer_orig.exe**.

   b. Also using Microsoft Explorer, navigate to the **Install-Tools** directory and rename the file **gzip.exe** as **gzip_orig.exe**.

   c.

5. On Solaris 2.7, the SPECTRUM Host Evaluation window does not report what O/S patches, if any, are missing on the system on which SPECTRUM is being installed. This will be corrected in CS3/MMS3. See *New Feature, Solaris 2.7 Support* on Page 1-3 for a detailed listing of the SunOS patches needed to run SPECTRUM on Solaris 2.7.

Chapter 4

MMS2 Software Characteristics

This chapter describes the contents of the MMS2 software.

MMS2 provides updated and additional management modules and support as described in this chapter. The following topics are covered:

- *New Support and Functionality in MMS2* (see below).
- *Problems Resolved in MMS2*, starting on Page 4-2.
- *MMS2 Known Anomalies*, starting on Page 4-4.
- *Management Modules Included in MMS2*, starting on Page 4-8.

New Support and Functionality in MMS2

The MMS2 software provides SPECTRUM 5.0rev1 with support for the items listed below.

1. Cabletron Network Address Translator MIB.
2. Cabletron Dynamic Host Configuration Protocol.
3. Cabletron Remote Access MIB.
4. Cabletron SSR-2000 device in SM-CSI1091.
5. Cabletron HSIM-W6 interface module.
6. BayStack 350 and 450 devices in SM-BAY1000. Their model types are HubBaySt350 and HubBaySt450.
7. Cabletron 9A100, 6A000, and SmartSwitch 2500 devices in SM-CSI1085.
8. A new Beta management module (SM-CIS1005) supporting the Cisco MC3810 device.
9. Cabletron 9T427-16 device in SM-CSI1083.

10. A new Beta management module (SM-CAT1005) supporting the Catalyst 2900 devices.
11. A new Beta management module (SM-CSI1095) supporting the Cabletron STS16 Token Ring Switch.
12. WS-X5225R EtherChannel Board for the Catalyst 5000 in SM-CAT1002.
13. Catalyst 5509 in SM-CAT1002.
14. CSX5500 in SM-CSI1077.
15. Cabletron TRMIM-62A in SM-CSI1025.
16. Management of the SmartSwitch 9000 EM module COM ports.
17. ELS100-24TXM and ELS100-24TXG in SM-CSI1064.
18. CoreBuilder 3500 in SM-3CM1006.
19. Cascade/Router ports and improved AutoDiscovery in SM-3CM1009.
20. Ericsson MIB rev 1.13 in SM-ERC1000.

Problems Resolved in MMS2

The following problem resolutions have not been addressed in any previous off-cycle releases.

1. Synoptics 28200 devices, currently unsupported, can now be modeled as GnSNMPDev.
2. CtTokenRingApp has been included in the Primary Application list.
3. The DevTop view of a 7A06 now displays the ports correctly. Previously, interface ports in the DevTop view were showing ??? for Interface number. This problem occurred when a 7A06-01 module had two A-PIMs installed, one being used for redundancy and, therefore, in a disabled state.
4. Reporting can now be done on the SysResApp application model for devices supporting this application.
5. A user can now connect StckRptrRev4 to CSIIfPort of 9H423_28.
6. When AutoDiscovery is run on the 3Com SuperStack II Token Ring Hub module, one of the Applications no longer ends up incorrectly collected by a Network model.
7. AutoDiscovery no longer places ELS100-24TX in the Lost & Found view.
8. ATMDISC no longer moves ForeRunner models to the Universe view.
9. ForeSwitchApp is now resolved to the appropriate ForeRunner interface, not automatically to ASX0.

10. ForeView now launches from NT.
11. Port resolution is now provided when manually modeling a connection between a ForeSwitchApp and an ATM client.
12. CoreWatch now launches from the SSR menu pick.
13. Reports can now be run for a Wellfleet Router's DLCI_Port.
14. A **Reconfigure Applications** button is provided for Rtr_Bay_Wflet.
15. A new script enables Site Manager to launch correctly.
16. RingDiscover no longer causes SpectroSERVER to crash.
17. 9F120-08 no longer causes SpectroSERVER to crash.
18. Selecting Model Information view from 3ComFMSport in the Find view no longer brings up a Default GIB.
19. When upgrading from SPECTRUM 4.0rev3 to 5.0rev0, certain files (PIB entries and GIB files) for the SS8H model were removed. As a result, some SmartSwitch 2000 models were showing as undefined icons. This has been fixed. Now a new model of the appropriate type will be created (e.g., 2E43_27, etc.) for each SS8H in the database. Any user-modified attribute values will be copied over to the new model (such as Polling Interval, Log Ratio, etc.). Also, the appropriate Collects (Topology), Contains (Location), and Owns (Organization) associations will be set up for the new model. Once the new model is created and the appropriate relations set up, the SS8H model will be destroyed. The new model will be placed in the same view as the current SS8H, however, no connections will be set up. The user will need to manually connect them or rerun AutoDiscovery. Secondly, because new models of a different type will be created to represent the devices, reporting will also be affected (due to the model handles and model types being different).
20. NetWideApp no longer crashes when community strings longer than eight characters are entered.
21. When modeling the HubSyn29xx, the ports on the SynFDDIMac model now get connections when running FDDI Ringview.
22. Clicking on the **Trap Table** button in the Configuration view of the 2E48_27 and 2E49_27 models no longer produces error messages.
23. Incorrect red alarms from unplaced Synoptics devices have been eliminated.
24. AlertMap for Host_IBM module has been provided.
25. The rmonstat application seg no longer faults when run against an IP Address that has an empty interface table.
26. A GenFDDIMAc icon is now created on the Rtr_Bay_Wflet model.

27. AutoDiscovery no longer hangs if the address range includes Wellfleet BLN II routers.
28. Alarms are now supported for the Cisco Access Server, AS5x00.
29. The SmartSwitch Router physical and Logical Device views have been modified so that Quad Serial and Dual HSSI modules now show correctly.
30. The DevTop view now launches correctly for the Cabletron 9A686-04 model type.
31. Double-click zones for the Hub3ComLS3000 Topology view icon and Off Page Reference icon now both access the same DevTop view.
32. A yellow, clearable alarm is now generated when a Cabletron SmartSwitch 9000 device is not associated with a chassis.
33. Default icons are no longer created in the DevTop views of SM-3CM1008.
34. RMONEthProbe no longer fails as monitor point on the Cabletron 6E233-49 device.
35. The HSIM-W6 is no longer created as a CSX400/200 when modeled by IP.

MMS2 Known Anomalies

Following are the known anomalies in MMS2, listed as they apply (i.e., by device type, management module number, application, or model type).

HSIM-W6 High Speed Interface Module

The Device Topology view does not display. An error message is generated.

The Device Interface view does not display any interfaces.

The Model Information view displays **???** for Model State, Condition, and Contact Status.

SM-CSI1012

FDMMIM

For the FDDI and Ethernet ports, the Port Configuration view generates the error message: `Model to read from is Null`.

SM-CSI1014

Standard RMON App

The performance information is red boxed in the Token Ring Promiscuous Segment Performance view.

SM-CSI1030

SmartSwitch 9000 (9E132_15)

When a SmartSwitch 9000 is modeled using a Gen9000 Model Type, the serial number for the device is not displayed in the Banner of the Configuration, Performance, and Model Information views.

SmartSwitch 9000 (9E133_36)

When a MMAC+ card is modeled, the serial number attribute (0x10030) is filled in with device data. When the card is replaced in the chassis, next time the view is brought up the serial number is the same.

SM-CSI1064

ELS100-24TX

This device fails to autodiscover and its model gets placed in Lost & Found.

SM-CSI1066

SmartSwitch 9000 (9H421_12)

1. The Port Bridging Status displays UNK (unknown) in the Device Chassis and Device Interface (Bridging mode) views.

2. When a SmartSwitch 9000 is modeled using a Gen9000 Model Type, the serial number for the device is not displayed in the Banner of the Configuration, Performance, and Model Information views.

SM-CSI1076

6E132-25 (Ds3App1407)

1. The Model Information view and DS3/E3 Configuration view contain **???** in some of the information fields.

   Solution: In the Configuration view, change the read modes for the attributes to ReadInstance and ReadWriteInstance.

2. The Ds3App1407 name is not visible when the Application view is in List mode.

   Solution: Place the mouse pointer over the branch where the name should be located to view the pop-up description. Use the right mouse button to view and select the applications subview menu.

6E132-25 (CtRemoteApp)

1. The ds1 Alarms Circuit Configuration view and the DS3 Extensions view contain **???** in some of the information fields.

   Solution: Change the read modes for the attributes to ReadInstance and ReadWriteInstance.

2. The CtRemoteApp name is not visible when the Application view is in List mode.

   Solution: Place the mouse pointer over the branch where the name should be located to view the pop-up description. Use the right mouse button to view and select the applications subview menu.

SM-CSI1085

Zeitnet ZX-250

1. There are no menu selections for Device view and Configuration view when right-clicking on the Device icon.

2. A Duplicate IP alarm notification does not occur when a second ZX-250 is modeled with an IP address used by another ZX-250.

SM-CSI1095

STS16 Token Ring Switch

1. Choosing Device Interface view from the drop down menu, then double clicking on Interface Description will bring up a default Gib.

2. When in the Device Chassis view, selecting **Print** from the File menu and then clicking **Print View** and **OK** results in a distortion of the images on the right side of the view.

3. Port resolution is not completed during autodiscovery.

4. Trap support is not provided in MMS2.

SM-3CM1007

3ComLinkSwitch 1000

   In the Security Users view on NT, when an "Add Entry" action fails, a message box is displayed. Selecting the **OK** button sometimes causes the SpectroGRAPH to exit.

SM-3CM1009

FMS Token Ring Device

   This device has two cascade ports rather than the one displayed.

SM-3CM1004, SM-3CM1007, SM-3CM1008, SM-3CM1011

All Devices

Device models go red rather than orange when the SNMP agent fails.

SM-3CM1011

3Com LinkSwitch 1100/3300

When in the Device Chassis view, selecting **Print** from the File menu and then clicking **Print View** and **OK** results in a distortion of the images on the right side of the view.

SM-BAY1000

HubBayStack 450

1. On UNIX, there is a default gib displaying for the Detail view that is accessed from the subview menu of the ports in the Device, Logical, and Devtop (BS450_24 board) views.

2. The Chassis Configuration and Chassis Group views do not display when accessed via the Large Device icon.

   Solution: Access the view from a Small Device icon.

3. When the HubBaySt450 is connected to a Lan or Universe container, the off-page reference is a Large Device icon instead of the triangular OPR icon.

SM-CAT1002

HubCat5509

If the HubCat5509 management module is installed, this device type may be used instead of the GnSNMPDev device type when discovering devices that do not have a management module installed.

Solution: Destroy the model and create a new one using **Create by Model Type**, selecting the GnSNMPDev device type.

SM-CAT1005

Catalyst 2900

When in the Device view of the HubCat29xx and selecting Port Configuration off of Port1, you will see red boxes around the information area while other ports appear OK.

SM-CIS1002

LightStream 1010

1. The PNNI_App is not fully supported for LS_1010. There are red boxed attributes in the Node Statistics view and PNNI Node Timer view.

2. The PNNI_App Information view Primary Application button displays "wait...".

   Solution: The Primary Application button will be removed in a future release.

SM-CIS1004

Cisco Access Server

CiscoView will not launch from the Access Server's menu.

SM-WEL1003

Rtr_Bay_Wellfleet

In the wf03ATM_App Information view, the primary application is displaying "wait...". Also, there are red boxes around the **Primary Address** and **User-Defined Type** fields in the Information view's Banner.

Management Modules Included in MMS2

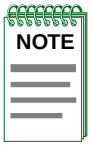
The MMS2 software includes the following management module categories:

- Management modules previously provided in MMS1, some of which have been updated in MMS2.
- Additional First Customer Ship (FCS) management modules that were not available on MMS1.
- FCS management modules that were Beta in MMS1.
- Additional Beta management modules.

The following pages list the management modules in three groups, i.e., Cabletron, Third Party, and Beta.

Cabletron Management Modules

Table 4-1 lists all of the Cabletron management modules included in the MMS2 software.



In the table below, an asterisk (*) beside the Model Type name denotes a model type that has been added in MMS2. In any case, for proper operation of your SPECTRUM 5.0rev1 system, you must re-install from MMS2 all Cabletron management modules that are in your current SPECTRUM database.

Table 4-1. Cabletron Management Modules in MMS2

Part Number	Model Type	Management Module
SM-CSI1000	Hub_CSI_MRXi Hub_CSI_IRBM Hub_CSI_IRM2 Hub_CSI_IRM3 Hub_CSI_MiniM Hub_CSI_SIRM	Cabletron Ethernet Repeater Hubs
SM-CSI1004	HubCSIEMME BRtrCSIEMM_E6	Cabletron EMME, Cabletron EMM_E6
SM-CSI1011	HubCSIMRXi	MRXI-22/24
SM-CSI1012	BdgCSIFDM	Cabletron FDM MIM
SM-CSI1014	N/A	RMON
SM-CSI1015	HubCSITRXI	Cabletron TRXI
SM-CSI1016	BdgCSITRBM	Cabletron TRBM
SM-CSI1020	HubCSISEHI	Cabletron SEHI-22/24/32/34
SM-CSI1021	BRtrCSINBR620	Cabletron NBR-620/420/220
SM-CSI1022	BRtrCSIuMMAC	Cabletron MicroMMAC-E
SM-CSI1023	HubCSITRMM	Cabletron TRMM
SM-CSI1024	BdgCSIETW	Cabletron ETWMIM
SM-CSI1025	HubCSITRMMIM	Cabletron TRMMIM
SM-CSI1029	N/A	Routing Services
SM-CSI1030	9E132_15 9E133_36 9E138_12 9E138_36	SmartSwitch 9000 Ethernet MicroLAN Switch Modules

Table 4-1. Cabletron Management Modules in MMS2 (Continued)

Part Number	Model Type	Management Module
SM-CSI1031	9F116_01	SmartSwitch 9000 FDDI Switch Module
SM-CSI1032	9F120_08 9F122_12 9F125_08 9F241_12	SmartSwitch 9000 FDDI MicroLAN Modules
SM-CSI1035	9F310_02 9F426_02 9F426_03	SmartSwitch 9000 FDDI INB Switch Modules
SM-CSI1036	9E312_12 9E423_24 9E423_36 9E428_12 9E428_36 9E429_12 9E429_36	SmartSwitch 9000 Ethernet SmartSwitch INB Modules SmartSwitch Modules SmartSwitch Modules
SM-CSI1037	N/A	Ring View for FDDI
SM-CSI1038	9T122_08 9T122_24 9T125_08 9T125_24	SmartSwitch 9000 Token Ring MicroLAN Switch Modules
SM-CSI1039	BRtrCSIESXW BRtrCSIESXM	ESX Devices (1320/1380, MIM/MIM-F2)
SM-CSI1040	HubCSITRMM2	Cabletron TRMM2
SM-CSI1041	HubCSITRMM4	Cabletron TRMM4
SM-CSI1052	BRtrCSIummact	Cabletron MicroMMAC-T
SM-CSI1053	HubCSISTHI	Cabletron STHI
SM-CSI1055	9E106_06	SmartSwitch 9000 Ethernet Module
SM-CSI1059	9A128_01 9A426_01 9A426_02	SmartSwitch 9000 ATM Access Module
SM-CSI1062	7C03 7C04 7C04R	SmartSwitch 7000

Table 4-1. Cabletron Management Modules in MMS2 (Continued)

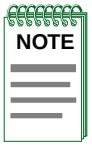
Part Number	Model Type	Management Module
SM-CSI1064	CSI_FNET10 CSI_FNET100 CSI_ELS10 CSI_ELS100***** Els100_Tx Els100_TxG Els100_TxM	FNET10/100/ELS10-26/ELS100
SM-CSI1066	9H421_12 9H422_12 9H423_26 9H423_28 9H429_12	SmartSwitch 9000 Fast Ethernet INB Modules
SM-CSI1068	8H02_16 2E42_27 2E43_27 2E48_27 2E49_27 2E43_51 2E253_49R	SmartSwitch 2200
SM-CSI1072	FrameRelayDTE	Frame Relay Manager
SM-CSI1073	SFSmartCell	SmartCell Switch
SM-CSI1074	9G421_02 9G426_02 9G429_02	SmartSwitch 9000 Gigabit Ethernet SmartSwitch Modules
SM-CSI1075	HubCSISEHI100	SEHI100TX-22
SM-CSI1076	6E122_26 6E132_25 6E123_26 6E133_25 6E128_26 6E129_26 6E138_25 6E139_25 6E123_50 6E133_49 6E233_49	SmartSwitch 6000
SM-CSI1077	CSX200 CSX400 CSX5500***** CSX7000	CyberSwitch Devices

Table 4-1. Cabletron Management Modules in MMS2 (Continued)

Part Number	Model Type	Management Module
SM-CSI1078	FRX4000 FRX6000	FRX4000 and FRX6000
SM-CSI1079	SmartMIM_216	SmartMIM-216
SM-CSI1080	2H22_08R 2H28_08R 2H252_25R 2H23_50R 2H33_37R 2H253_25R 2H258_17R	SmartSwitch 2000 Fast Ethernet
SM-CSI1082	6H122_08 6H122_16 6H123_50 6H128_08 6H129_08 6H133_37 6H202_24 6H203_24 6H252_17 6H253_13 6H258_17	SmartSwitch 6000
SM-CSI1083	9T425_16 9T427_16***** 9T428_16	SmartSwitch 9000 Token Ring SmartSwitch Module
SM-CSI1087	2M46_04	SmartSwitch 2040
SM-CSI1088	6M146_04	SmartSwitch 6000
SM-CSI1091	SmartSwRtr	SmartSwitch Router
SM-CSI1092	9M426_02	SmartSwitch 9000 Dual Slot Carrier Module

Third Party Management Modules

Table 4-2 lists all of the third party management modules included in the MMS2 software. Some of these may have been updated in MMS2.



In the table below, an asterisk (*) beside the Part Number denotes a management module that has been added in MMS2; an asterisk (*) beside the Model Type denotes a model type that has been added in MMS2; and a double asterisk (**) denotes a management module that was previously a Beta product and is now FCS. In any case, for your SPECTRUM 5.0rev1 system to operate properly, you must re-install from MMS2 all third party management modules that are in your current SPECTRUM database.

Table 4-2. Third Party Management Modules in MMS2

Part Number	Model Type	Management Module
SM-3CM1001	NETBuilder	3Com Netbuilder
SM-3CM1004	Hub3ComFMS	3Com FMS
SM-3CM1006	HubLp4xXXX CoreBldr3500*	3Com Lanplex
SM-3CM1007	Hub3ComLS1000 Hub3ComLS3000	3Com LinkSwitch 1000/3000
SM-3CM1008	Hub3ComPortSw	3Com PortSwitch Hub 40
SM-3CM1009*	Hub3ComSSTR	3Com SuperStackII/FMS TR Hub
SM-APC1000	UpsAPC92xx	American Power Conversion UPS
SM-ASC1000*	ST1kNode	Ascom Timeplex ST-1000
SM-ASD1000	Ascend_MAX	Ascend
SM-BAY1000	HubBaySt100 HubBaySt10 HubBaySt15x HubBaySt300 HubBaySt350* HubBaySt450*	BayStack Ethernet Hubs
SM-BAY1001	HubBaycent100	Bay Networks Centillion 100
SM-BAY 1002**	Accelar	Accelar
SM-CAT1000*	SwCat1200	Catalyst Workgroup Switch
SM-CAT1001*	HubCat1400	Catalyst Workgroup Concentrator

Table 4-2. Third Party Management Modules in MMS2 (Continued)

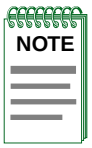
Part Number	Model Type	Management Module
SM-CAT1002	HubCat5000 HubCat5002 HubCat5500 HubCat5505 HubCat5509*	Catalyst 5000/5500/5509
SM-CAT1003**	SwCat1900 SwCat2820	Catalyst 1900/2820
SM-CAT1004**	SwCat3200	Catalyst 3200
SM-CHP1002	CComONline/ CComONcore	Chipcom OnLine/OnCore Hub
SM-CIS1001	Rtr_Cisco Rtr_CiscoAGS Rtr_CiscoCGS Rtr_CiscoIGS Rtr_CiscoMGS Rtr_CiscoMIM Rtr_Cisco2500 Rtr_Cisco3000 Rtr_Cisco4000 Rtr_Cisco7000 Rtr_CiscoMIM3T	Cisco Router II
SM-CIS1002	LS_1010	Cisco Lightstream
SM-CIS1003	StrataCom	Cisco StrataCom BPX Service Node
SM-CIS1004**	AS5x00	Cisco Access Server
SM-ERC1000*	MD110_PBX	Ericsson ND110
SM-FOR1000	ForeRunner	ForeRunner ATM Switch Modules
SM-GHO1000	GenericHost	Third Party PC and Workstation
SM-GHO1003*	Host_HP	Host HP
SM-GHO1004	Host_NT	NT Host
SM-GHO1007	Host_Compaq	Host Compaq
SM-HPH1000	HPAdvStkHub	Hewlett Packard Advance Stack Hub
SA-NVG1000	Netview	Netview Gateway
SM-SYN1002	HubSynEnet28xx	SynOptics Stackable Hubs (2800 Series)
SM-SYN1003	HubSyn5xxx	SynOptics 5000 Series

Table 4-2. Third Party Management Modules in MMS2 (Continued)

Part Number	Model Type	Management Module
SM-SYN1006	SwSyn281xx	SynOptics 28000 Series
SM-SYN1007	HubSyn5DNxxx	SynOptics Distrubuted 5000 Series
SM-SYN1008	HubSyn27xx	SynOptics Stackable Hubs 2700 Series
SM-SYN1009	HubSyn29xx	SynOptics Stackable Hubs 2900 Series
SM-WEL1003	Rtr_Bay_Wflet	Bay Networks Wellfleet Router
SM-XYL1001*	Xyp_MaxServer Xyp_ETSMIM	Xplex MaxServer and ETSMIM

Beta Management Modules

Table 4-3 lists the Beta management modules that are included in the MMS2 software.



In the table below, an asterisk (*) beside the Part Number denotes a Beta management module that has been added by MMS2. An asterisk (*) beside the Model Type denotes a Beta model type that has been added by MMS2. Some of the Beta management modules listed in the table may have been updated in this release. In any case, for your SPECTRUM 5.0rev1 system to operate properly, you must re-install from MMS2 all Beta management modules that are in your current SPECTRUM database.

Table 4-3. Beta Management Modules

Part Number	Model Type	Management Module
SM-3CM1011	Hub3ComLS1100 Hub3ComLS3300 Hub3ComLS3400	3Com LinkSwitch 1100/3300/3400
SM-CAT1005*	HubCat29xx	Catalyst 29xx
SM-CIS1005*	Cisco_MC3810	Cisco 3810
SM-CSI1085	ZX_250 SS2500* 9A100* 6A000*	Zeitnet
SM-CSI1095*	STS16	STS16 Token Ring Switch

Chapter 5

Software Superseded by CS2/ MMS2

This chapter describes the patches and problem resolutions that were previously issued for SPECTRUM 5.0rev1 and are being superseded by the CS2/MMS2 software.

CS2/MMS2 supersedes CS1/MMS1 and the following previously issued SPECTRUM 5.0rev1 off-cycle releases (Patches) and other problem resolutions.

- The off-cycle releases (Patches) that were originally superseded by CS1/ MMS1.

  See the Section titled *Patches Originally Superseded by CS1/MMS1*, starting on Page 5-2.

- Other problem resolutions provided by the CS1/MMS1 software.

  See the Section titled *Other Resolutions Included in CS1/MMS1*, starting on Page 5-6.

- The off-cycle releases (Patches) issued since the CS1/MMS1 release.

  See the Section titled *Patches Issued Since the CS1/MMS1 Release*, starting on Page 5-8.

Patches Originally Superseded by CS1/MMS1

The following SPECTRUM 5.0rev1 off-cycle releases (Patches) were originally superseded by the CS1/MMS1 software and are now being superseded by the CS2/MMS2 software.

SPECTRUM_5.0rev1.P01

Obsoleted by P16.

SPECTRUM_5.0rev1.P02

AutoDiscovery is requesting process status every 2-5 seconds.

AutoDiscovery is not reading all ranges in list.

When using the DisSysOIDList function and running AutoDiscovery, for each device in the network that answers the sysOID request and each device that does not match what is in the DisSysOIDList attribute, the SnmpPif is being created but not removed.

The AutoDiscovery status window blanks out or freezes after P49 patch is installed.

After you start AutoDiscovery while Online Backup is running, AutoDiscovery will not stop until the Online Backup is complete.

SPECTRUM_5.0rev1.P03

Obsoleted by P11.

SPECTRUM_5.0rev1.P04

A request has been made to add a "flagable" option so that child attribute information is not gathered. Without it, the Server pegs at 98% for the time (3+minutes) it takes to gather attributes.

The mask strings stored in the description field for a 4.0rev3 configuration are not shown in the Mask window when that configuration is imported into 5.0.

Capturing of host configurations from a HubCat5000 (having brought up Ecm through the CatStackAPP application) fails.

Capturing a host configuration from a router by following the directions in the user's manual fails.

After creating and saving a template with all attributes, select the template. No attributes show on the right hand side where the list usually is.

SPECTRUM_5.0rev1.P05

Generating multiple html reports gives the same header for each.

There are problems with printing to A4 paper in tabular reports.

Change scheduled reports to use SpectroSHELL.

In a summary report, either created through the report formatter or with the included UpDownExec.rib, a line break is included after each summary.

Saving the print command in default.PRF for reports causes .gif creation failure.

SPECTRUM_5.0rev1.P06

5.0rev1 SANM cannot handle distributed environments if one environment is a SpectroSERVER running SPECTRUM 4.0rev3.

SPECTRUM_5.0rev1.P07

5.0rev1 ARS Gateway cannot handle distributed environments if one environment is a SpectroSERVER running SPECTRUM 4.0rev3.

SPECTRUM_5.0rev1.P08

Obsoleted by P16.

SPECTRUM_5.0rev1.P09

SAS export gives incomplete results for some model entries.

SPECTRUM_5.0rev1.P10

Obsoleted by P16.

SPECTRUM_5.0rev1.P11

Destroying a model in CLI that does not have a model name fails.

Allow the user to configure the timeout value in the configuration file (.vnmshrc).

SPECTRUM_5.0rev1.P12

Obsoleted by P16.

SPECTRUM_5.0rev1.P13

coreBuilder5000 fails to get correct bridge MIB information.

SPECTRUM_5.0rev1.P14

Obsoleted by P16.

SPECTRUM_5.0rev1.P15

In 5.0, a user is set up with a security string of USER,0 and a model is set up with USER as the security string. As the user, when you go into the model information view of the model, the security string is "********" because the user does not have ADMIN privileges. The user changes the model name and tries to save the changes. A dialog appears that gives the error stating an “Invalid security string specified.”

SPECTRUM_5.0rev1.P16

Error while retrieving the alarm history information. An error occurred while retrieving the alarm history information for this model. Error: Error 0x6000020 (0x6000020)

Problem with canceling filter when in Modeltypes tab.

Get error message when starting AlarmManager as RO user.

5.0rev1 SANM can't handle distributed environments if one is 4.0rev3 SERVER.

The Alarm Manager does not handle a large number of events well in the Events tabbed page of the information panel.

The History tabbed page should be rolled into 5.0rev1 since it provides information the user really wants. The history page displays all events for a specified model between creation of an alarm and clearing of the alarm.

ForeRunner ports create a red alarm when device attached to the port goes down. These should be yellow alarms.

When changing the Model Name of a Model via the Model Information View the new name does not get propagated to all of its child models.

A READ only user can change the Filter options in the Alarm View.

Filtering on multiple PCauses in the Alarm Manager is not saved to the user model.

SpectroSERVER crashes with a mts:malloc: out of memory message.

FrameRelay is not suppressing the dlci alarm when the router goes down. Two new attributes were added to support this functionality: AlarmLinkedPorts and SuppressLinkedPortAlarms. These two attributes have been added to the LivePipes Information GIB accessed from the VNMs Performance GIB “Application” list. They toggle from TRUE to FALSE.

Live Pipes is not suppressing one of the port alarms when both linked ports are bad and the “Suppress Linked Port Alarms” option is set to TRUE in the Live Pipes GIB.

Watch Editor PGUI will not allow polling interval over 06:28:15.

SpectroSERVER crashes with mts.malloc error after upgrade to 5.0rev0.

SpectroWATCH does not work for calculations like: x=x+y.

When a WA_Link is determining its proper state during re-start, it asks both routers if they are down. The GREEN router responds, “No, I'm up”. The ORANGE router incorrectly responds “Yes, I'm down”. This causes the WA_Link to go RED.

At times we lose contact with LandScapes models.

OnlineBackup fails on first try.

SEHi's are being modeled as GnSNMPDevs.

Change the event generated at VNM shutdown so that it gets sent to the VNM model.

Add CsIHEpiPoll functionality to improve fault isolation for EPI models.

The type fields for some EPI requests are not being set correctly.

If the user model has a Community String other than ADMIN, when they try to connect to the 5.0rev1 SERVER from a 4.0rev3 GRAPH, from the command line, the following error appears and no GRAPH appears.

```
% ./SpectroGRAPH -vnm xxx.xxx.xxx.xxx
Opening a service to xxx.xxx.xxx.xxx
CsSecurity: Error, Error reading user model.
Error Code = 0x1
```

While purifying SPECTRUM 5.0rev1 with CS1/MMS1 and P27 a memory leak was detected.

If the user is filtering with DisSysOIDList, don't create GnSNMPDevs for devices that have a blank sysOID.

There is a problem with router redundancy and router reconfiguration running at the same time.

The customer would like certain types of non-physical interfaces to be modeled. These are the ISDN interfaces that contain the secondary IP Address, and from which the backup link status can be read.

In the I/O Statistics view off the VNM Performance view, data is not displayed in the Network I/O graph if the network card is a hme0 rather than the standard le0 card.

Occasionally the SERVER core dumps when bringing up the I/O Statistics view off the VNM Performance view.

The model name is being duplicated for the CT_Stp_App model of some Cabletron devices. The customer is seeing this for 6H122-08's, 6E132-25's and 6E12-06's. It is happening on some but not all.

AutoDiscovery causes IH Timer Threads to max out and never decrease. Adisc finishes ok but the server seems to get bogged down and performance suffers.

Network load on CsiRptr model is incorrect.

EMM-E6 with two WAN Brims will not configure.

In the IRM2/IRM3 Performance View, the Load is always zero.

Changes in this patch affect all installations which include: SM-CIS1001, SM-CPORT, SM-CSI1072, SM-GEXT, SM-CSI1026, SM-COMBRG, SM-CISAPP,

SM-COMRPTR, SM-GENTR, SM-COMMAN, SM-GNBDG, SM-GNRTR1, SM-MMSW, seh, SM-CSI1000 and SM-TRHUBSTK.

Not all DLCI port models appearing on Rtr_Bay_Wflet DTE. The user is unable to edit a default SpectroWATCH off of the DLCI_Port model type.

Destroying any model after performing a find_attr_by_oid crashes the SpectroSERVER.

Purify reports leak in CsIHLostAndFoundDestroy::do_destroy.

SpectroWATCH calculation causes erroneous overflow error.

Cisco routers don't send link up event to clear link down alarm.

SpectroSERVER crashes due to problems with SpectroWATCH.

Other Resolutions Included in CS1/MMS1

The following additional problem resolutions were incorporated into the CS1/MMS1 software and are being superseded by the CS2/MMS2 software.

1. Incorrect SpectroWATCH formulas for PacketRateIn and PacketRateOut
2. Cleaned up memory leaks in ECM
3. Support was added for an indirect Component OID specification attribute. A 3Com device for which a MM is now being developed does not support a standard table of Board.Ports. The instance IDs of the ports are generated randomly by the device and it is up to the MM developer to translate them into standard Board.Port (e.g. 1.1 1.2 1.3 etc...) mappings. This value is stored in a separate attribute created by the MM developer to be displayed on icons for numbering boards and ports in the UI. The problem is that the ordering done for the chassis view is based on the Component_OID attribute value of the ports. Here is an example:

Component_OID (randomly assigned by device)	Actual Board.Port
12563	1.2
14567	1.1
239099	1.3
etc.....	

As you can see, if we order the ports by the randomly assigned Component_OID value in the device's MIB, the ports will NOT be ordered in the chassis view.

4. Assignment Filter Not Working in Enterprise Alarm Manager. The problem only occurs when saving the assignment filter with the "(Unassigned)" entry in the “Hide” list.
5. Corrupt schema files not handled well in Oracle exports
6. IP Address field was added to Event00010017 & Event0001030a.
7. VNM Polling-Related problems were fixed which increases the VNM performance.

    d. Web AlarmView not updating properly, reading cached pages.

8. Fixed coredump in new APIs.
9. Add CsIHEpiPoll to improve fault isolation for EPI models.
10. NT Install doesn't warn user which Service Pack is needed.
11. The Host Configuration Window during the Verify Operation shows Security Tokens.
12. SpectroGRAPH crashes when a Port Performance View of a device modeled in a remote landscape is scrolled while loading.
13. Running Online Manuals from the SpectroGRAPH, instead of from the Control Panel, can cause an error of “This document could not be found:” when doing a search.
14. ArchMgr very infrequently produces strange output & will not start from CPANEL.
15. Importing a configuration from 4.0rev3 into 5.0rev1 that has attributes that no longer exist in 5.0rev1 will cause the import to fail.
16. Missing aliases “ss”, "sg" and "SPECTRUM" in NT SpectroSHELL.
17. Router Discovery places EMM_E6 in lost&found when routing enabled.
18. Launching Landscape Alarms from a Landscape icon brings up alarms for the SpectroSERVER the client is connected to instead of the selected Landscape icon.
19. Install.tar for any patches including CS1 only includes the components being installed and removes any other components that were installed previously which causes the next patch install to not recognize the complete list of installed components.
20. The SpectroGRAPH may crash after a migration from SPECTRUM 4.0rev3 to SPECTRUM 5.0rev1.
21. ATM port on the 2E42-27 & 2E48-27 is reporting no link.
22. Using the Report Formatter, RibE, to Open and Save any Statistical .rib file will fail.

23. Add PCause information into Event Format files: Event00010701, Event00010702, and Event00010706

24. In a Fault Tolerant environment, the secondary SpectroSERVER may crash.

25. Install error for mtregupd.exe on NT. Unable to locate msjet35.dll.

Patches Issued Since the CS1/MMS1 Release

The following SPECTRUM 5.0rev1 patches are superseded by CS2/MMS2.

SPECTRUM_5.0rev1.P17

Obsoleted by installing CS1/MMS1, P20, and P22.

SPECTRUM_5.0rev1.P18

Running adisc in a LAN with Centillion devices causes the server to core dump.

SPECTRUM_5.0rev1.P19

Obsoleted by the installation of CS1/MMS1 and P21.

SPECTRUM_5.0rev1.P20

Included in P31, P34, P37, P41, and P48.

SPECTRUM_5.0rev1.P21

Included in P33.

SPECTRUM_5.0rev1.P22

Included in P37 and P49.

SPECTRUM_5.0rev1.P23

Included in P43.

SPECTRUM_5.0rev1.P24

MALT is hanging when selecting Port Activity option. When running MALT and trying to find devices attached to SmartSwitch 6000s, both Switch/Bridge and Port Activity options for MALT never complete. This has been seen on databases with over 100 6000s and over 10,000 models in the database.

A number of things were done to prevent this problem.

1. MALT will now only quit if it has not heard a response from the server it is querying for 5 minutes. If we have heard no responses within 5 minutes something is wrong. The unprocessed information will be printed to the MALT.OUT file.

2. The maximum number of requests that MALT can send to a server has been increased from 1000 to 8000.

3. Requests are no longer sent all at once. They are broken up into chunks of 100 and sent at 5 millisecond intervals. This allows MALT to read in some responses that may back up to the point of causing MALT to freeze.

SPECTRUM_5.0rev1.P25

Included in P34, P41, and P48.

SPECTRUM_5.0rev1.P26

Included in P45.

SPECTRUM_5.0rev1.P27

Included in P44.

SPECTRUM_5.0rev1.P28

Included in P34, P41, and P48.

SPECTRUM_5.0rev1.P29

The Event Log for a model that has recent events is showing no events in the log. No message appears stating that there are no events for that time frame. When trying to page up, the mouse pointer turns into an hour glass and then hangs. The event system has a two-tiered filtering system. In the best case all of the filtering is done by the database layer. This is desirable because the database is organized in a manner that makes filtering on model handles and/or time very efficient. If database filter is used exclusively then the exact events you have requested are pulled from the database without having to filter on every event. The second tier uses the CsEventFilter code for filtering. In this case each event is pulled from the database and run through the filter. This continues until one of the following occurs:

- The end of the database is reached.
- The number of events that you requested have been found.
- The search limit is reached (Currently 10,000 events).

So, the model that the EventLog was brought up on had +10,000 events which caused the EventLog to eventually hang.

This has been resolved by building up the event filter object so that the model handle filter node is at the base of the filter hierarchy with the date/time filter nodes.

SPECTRUM_5.0rev1.P30

Unable to assert ORANGE alarm on DLCI_Port w/watcheditor

A threshold watch on a DLCI_port model type will not assert an Orange alarm. It will assert a Yellow or Red but not an Orange.

sets to FRX dev is bringing down network

Models will now reg_watch_change after the first successful read of the model's attributes. When a change does occur, the IH ensures that a write is necessary by checking the current value of the external attribute before writing.

FrameRelay DTE models were disappearing. Added code to check that DLCIs are unique before attempting to shift the modeling.

SPECTRUM_5.0rev1.P31

Included in P34, P41, and P48.

SPECTRUM_5.0rev1.P32

After editing a policy, any attempt to exit the application causes it to hang forever. It appears that this only happens after saving a policy, not when just viewing them.

The issue is that when GET_EXISTING_ALARMS was set to “false” in the .alarmrc and then AlarmNotifier was started, sometimes the user would see alarms come through that had a time stamp of earlier than when AlarmNotifier was started.

To resolve this, when AlarmNotifier makes the initial request to the SpectroSERVER explaining what kind of alarms should be received, if GET_EXISTING_ALARMS is false, a filter specifying ALARM_DATE_TIME > (startup time) is added. With this filter added to the criteria, even if an update on an existing alarm comes in, it will not pass this filter and not be sent to AlarmNotifier. This seems to work as expected. The additional filter is not added if GET_EXISTING_ALARMS is true.

SPECTRUM_5.0rev1.P33

Host_Compaq does not work well with Insight Mgr 4.11.

Compaq has two sets of error logs. One for Insight Manager 4.11 and the other for Insight Manager 3.11. Compaq introduced a new object (attribute) that indicates which set of attributes is being used.

The cause of the problem is that two Event Log Views are being displayed in SPECTRUM. Only one of them is supported by Insight Manager, which is determined by the version you are running. One view will contain no information, which is confusing.

The solution is to create an inference handler to query the new object (external attribute, cpqHeEventLogSupported). Based on the value of this attribute we will display only the correct Event Log view.

The SpectroSERVER is crashing while running ADISC. This is caused by the function is_it_a_SUN de-referencing a zero value. This has been resolved by checking the value before de-referencing.

SPECTRUM_5.0rev1.P34

Included in P41 and P48.

SPECTRUM_5.0rev1.P35

Included in P50.

SPECTRUM_5.0rev1.P36

Included in P47 and P48.

SPECTRUM_5.0rev1.P37

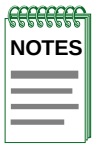
Included in P49.

SPECTRUM_5.0rev1.P38

The server is terminating when 45% of the models get activated. During startup of the SpectroSERVER, with ChipCom ONline/ONcore Models from the CSEU-CCOM product, when the device cannot be contacted, the logic in CsComMntrIH::trig_model_activate will sometimes cause uninitialized memory to be accessed. This, in turn, causes the server to terminate.

SPECTRUM_5.0rev1.P39

On Windows_NT, the SpectroSERVER is crashing after a couple of minutes. This is caused by the fact that we don't properly handle changing the icmp packet size on NT. We change the send size, but we don't account for the larger packet on the return. This has been resolved by changing the code to account for the larger packet size.



1. The following corrected anomaly was included in Patches P40, P41, P42, P43, P44, P45, P47, P48, P49, P50, and P51.

When you run an Online Backup from the VNM icon, the status in the Online Backup window reports that the Backup failed. VLAN Manager 1.8 is also installed on the machine. This happens only during a very specific set of events that can come from a vpapi client (VNM, etc.) as follows:

1. Thread A sends a ticket request for the start of a process in the foreground.
2. Thread B sends a ticket request for process is alive.
3. Thread B receives a response on process is alive.
4. Thread A receives a response that the foreground process has died.

In this case, the information returned to Thread A in the actual ticket is incorrect with respect to what was sent in the parm block. This occurs because the exchange id and function id are replaced from Step 3 to Step 4. For example, if Thread A relies upon the exchange id to ensure that it is dealing with a certain message, then the information is incorrect. Since another ticket is not sent back, a deadlock results. The resolution was to change the way some information is stored between client requests.

2. The following corrected anomaly was included in P42, P43, P44, P45, P47, P48, P49, P50, and P51.

The SpectroGRAPH does not connect to a newly started and running SpectroSERVER; however, it does connect after several attempts. The cause is that processd is not sending a reply to the “ticket is ready” message back to the SpectroSERVER with the correct exchange id. This causes the SpectroSERVER to block before it has called accept on its listen socket. The resolution was to include the ticket in the exchange id from the CsVnmMsg, rather than to include it in the reply.

SPECTRUM_5.0rev1.P40

While running SpectroSERVER, when SpectroWATCH executes a script, a small memory leak occurs. This has been resolved by deleting the memory appropriately.

While running SpectroSERVER, a small memory leak occurs in SpectroWATCH. This has been resolved by deleting the memory appropriately.

(Also refer to the Notes on corrected anomalies, above.)

SPECTRUM_5.0rev1.P41

Included in P48.

(Also refer to the Notes on corrected anomalies, on Page 5-12.)

SPECTRUM_5.0rev1.P42

Creating a model by IP via CLI, creates the device as Pingable. This has been resolved by having it create a device with the correct model type.

(Also refer to the Notes on corrected anomalies, on Page 5-12.)

SPECTRUM_5.0rev1.P43

After installing P23 the following message is printed out in the VNM.OUT file: status=1 status=1, repeatedly. This was caused by debug output left in the code. This has been removed.

RMONEthProbes are not being created after installing P23. This was caused by code that was trying to filter out SMB10 interfaces. This has been resolved by backing out the code to filter out the SMB10 interfaces.

When using the RMONEthProbe for the FEPIM Port on a 6E233-49 the Monitor Point watches will intermittently fail.

When you removed a probe as a monitor point it used to invalidate the actual probe instances because the hex conversion was used, so it was invalidating the wrong probe. The solution is to use the decimal conversion.

The current RMON code was not searching free slots in EtherStatsTable for more than 50 instances.This will cause a problem for devices with more than 50 instances in the etherstats table. The solution is to increase the number of slots.

Token Ring Probes are failing as Monitor Points. This is being resolved by adding the correct attributes to allow this to work correctly.

The TR_Mon_Ring_Speed watch is set to read the ifSpeed from the MIB-II Interface Table. The problem occurs in that the OID suffix is set to use the value of the attribute, mp_intefaceOIDref. This attribute is set to 1, and unless changed by an Inference Handler, it will remain 1. This is true, regardless of the interface index of the RMON TR Probe that is used to roll-up values to the Discrete LAN. This is being resolved by modifying the monitor point inference handler and setting the value of mp_intefaceOIDref to the value of the RMONTRProbe's I/F index which is being copied into the Lan.

There is also an error in the Load Calculation. It is defined, using the SpectroWATCH TR_Mon_Util. This is being resolved by correcting the calculation.

The Check Configuration action button in the RMON profile GIB view is not getting implemented for the RMONApp model. It responds with “Attempt to invoke action failed. Error = Not implemented,0x2”. This is being resolved by

initiating the process to discover the RMON groups by creating the RMONCreate model and triggering the correct action.

(Also refer to the Notes on corrected anomalies, on Page 5-12.)

SPECTRUM_5.0rev1.P44

Capturing of host configs on SmartSwRtr fails with no explanation The error states “Capture Failed” with no details.

To reproduce this, go to the configuration screen and perform a capture. It will “think” for a while, and, if you have the “Configuration” screen open off of the device, the “Manager Address” field will change to the last known entry for the IP address and right after, you'll see ECM fail.

The cause was that the attribute type of the ManagerCfgAddress was incorrectly set to text-string where it should be of type IP ADDRESS. The resolution was to correct the setting of the attribute type.

If the customer tries to do a capture on a large number of models of a given model type, sometimes the process will hang and never return. This has been resolved by optimizing the code to read the template and store it rather than repeatedly reading it for each device.

In ECM, create a new configuration in the configuration window by adding attributes from the list of attributes shown. Now Undo this insert operation by invoking Edit->Undo Insert from the Menu. The attribute(s) inserted are not shown (refreshed) in the list of insertable attributes window after the Undo Insert operation is performed. This has been resolved by refreshing the list of attributes after the Undo Insert operation is performed.

ECM does not display scheduled Jobs. The scheduled event section is blank even though the scheduled jobs show up when displayed via command line. This happens because of the incorrect filter string given by ECM to CsScheduler. This has been resolved by passing the correct filter string.

After saving a configuration, the user is able to complete a load with the safe option. When this configuration is then exported and re-imported, the user is unable to load with the safe option selected. The user is able to load this configuration when the safe load option is not selected. The problem was occurring due to the absence of model handle of the device when the capture operation was performed. This has been resolved by having the model handle of the device retrieved and packed when the configuration information is stored.

The Enterprise Configuration Manager core dumps when the View/View by Flags option is selected from the menu bar. This has been resolved by having the View by [Attribute/Flags/Sequence] for attributes contained in a configuration grayed out in the View pull down menu when no configurations are selected.

During a capture of multiple attributes, if one or more attributes are not captured, ECM does not treat this as a fatal error and continues. ECM saves the captured configuration, with the captured values for successful attributes,

and some default values, for unsuccessful attributes. The result of such a capture operation is "NON_FATAL_ERROR". This does not prevent writing the configuration to database and also shows up as successful, but sends an event to the SS indicating capture “not successful.” This is how this will work now:

The capture detail window indicates status, which could be either success, partly successful, or failed

In all cases, the capture detail window shows the result of each attribute captured, and the configuration is written to the server.

In the event of partial success, an additional event is posted to the SS. A new CsEvFormat file (Event00820012) has been added for this purpose. However no alarm is generated.

A few non-critical problems that show up:

a. When capture reports failure, a pop-up dialog box shows up a message “Error capturing configuration from?" This message can be safely ignored.

b. In the event of partial success of a configuration, the host configuration (in cisco routers) is not captured at all. Once more this is not important, as in any case, one of solutions was to "not write the unsuccessful configurations to the server".

(Also refer to the Notes on corrected anomalies, on Page 5-12.)

SPECTRUM_5.0rev1.P45

When opening an Enterprise Alarm Manager, the application retrieves the current list of alarms, but it never updates this list subsequently - it remains static until the alarm manager is restarted. If multiple alarm managers are running, they'll show different lists of alarms. The problem stems from sounds turned on for the Alarm Manager but the sound function not working on the system. The resolution is to add code from Sun to work around the threading problem and to delete the object that does the threading when disabling the sound.

WEB Alarm View sorting on day instead of date. This is because the sorting is done on the date/time string instead of the date/time value. This has been resolved by changing the sort to sort on the date/time value.

AlarmView retains all the event, location, pcause information of a selected alarm after clearing all alarms. This only occurs in the Events and History tabbed pages. This scenario occurs when the event and/or history request has not yet completed and all alarms in the view are removed. When the callback for the event/ history data finally occurs, it fills in the tabbed pages as if the alarm were still displayed. This has been resolved by checking to see if the alarm has cleared before displaying the data.

If a customer has added notes or status to and existing alarm in Alarm Manager, the new changes are not reflected in AlarmWeb view when they happen, although the html files are being updated when the changes happen.

The problem is that the pages are being cached in Netscape. This has been resolved by changing the pages so that they are not cached.

Alarm Manager is crashing intermittently and no core file is being generated. A bad alarm node is in the table which causes the sorting code to compare bad data and therefore crash. The bad alarm node is in the table because an update occurred with both an ADD and a MODIFY. The same could occur if a REMOVE and a MODIFY came in on the same update. This has been resolved by making sure the bad data does not get in the table and by adding additional error checking to the sorting code to guard against crashes like this in the future.

When suppressing secondary alarms in AlarmWeb it cores. The "showSecondaryCount" preference is not being registered for in Web Alarm View because it is not used or needed. However, this preference is being checked when filtering out suppressed alarms. The preference is being retrieved and a test is being done to insure it is registered; then it is accessed. Since it was not registered for in Web Alarm View, the value being retrieved is NULL and hence the crash. This has been resolved by checking to see if the preference was registered.

Over several days, Web AlarmView will consume memory until it crashes. This was resolved by keeping a list of the event nodes used in creating the historyDataList. This solution only affects users of the history API.

(Also refer to the Notes on corrected anomalies, on Page 5-12.)

SPECTRUM_5.0rev1.P46

This patch number was not used.

SPECTRUM_5.0rev1.P47

Included in P48 and P51.

(Also refer to the Notes on corrected anomalies, on Page 5-12.)

SPECTRUM_5.0rev1.P48

Included in P51.

(Also refer to the Notes on corrected anomalies, on Page 5-12.)

SPECTRUM_5.0rev1.P49

After running Distributed Find across SpectroSERVER landscapes, the chassis view of the SS6000 and SS9000 boards will not launch in the landscape to which the user is connected. The problem is that when the Distributed Find View is launched, it uses the landscape of the server where the find is being done, instead of the landscape where the SS9000/SS6000 device is actually modeled. The resolution was to the use the model handle of the SS6000 and SS9000 as the landscape handle.

ADISC does not discover SS6000 devices properly. The problem is that all of the boards in the chassis do not know about each other across the backplane.

The reason is because of spanning tree. There are two scenarios that exist that determine how spanning tree is implemented across the backplane.

1. The root bridge is one of the boards inside the chassis. Spanning tree sends BPDU's from the switches to the root bridge. If the root bridge resides inside the chassis, then the BPDU's travel from the other boards across the backplane to the root bridge and back. The root bridge knows about all the other boards in the chassis and all the other boards in the chassis know about the root bridge. However, BPDU's are not passed between the other boards. Since BPDU's are not passed between these boards, they "do not know about each other" and their bridge tables are not compared.

   The modeling in this scenario results in all the boards showing a connection to the root bridge in a star.

2. The root bridge resides outside the chassis. Another bridge/switch is connected via the front panel to a board in the chassis. The BPDU's are sent across the backplane from the other boards in the chassis out to the root bridge through the board which is connected to the root bridge via the front panel. The front panel board knows about all the other boards in the chassis because it records the source mac from the BPDU's sent through it across the backplane. However, none of the other boards know about each other.

   The modeling in this scenario is erratic at best.

The solution is to write a new inference handler and attach it to the SS6000 module. It will be responsible for gathering the MAC addresses heard off the SS6000 module's interfaces, as well as the MAC addresses of the modules connected to it via its backplane interfaces. The model state algorithm will also be modified so that a SS6000 module will only go active after it's properly associated with a chassis. However, if a chassis cannot be determined within 2 minutes, then the model state will be forced active, and a yellow alarm will be generated to alert the user. In order for all this to work, all modules that reside in the chassis must be modeled, and their model states must all be ACTIVE, before the GET_ADDRESS_LIST action is sent by Adisc. This will be the case if all the SS6000 modules reside in a single subnet. However, if they don't, then Adisc may have to be run a second time in order for the SS6000 modules to have access to their neighbor's MAC addresses.

NOTE: Connections will only be established between modules if the module's backplane interface has a MIB II ifOperStatus of up, and a dot1dStpPortState status of learning, forwarding or listening.

NOTE: If the customer has done manual modeling and placed S6000 boards from the same chassis into different IPClass, LAN or Network containers then the modeling will still be unpredictable.

The problem is that the serial number for SS 2200's cannot be read from the GIB views. The resolution is to attach an inference handler that copies the serial number from the device to the internal serial number attribute to the hub model.

The Chassis view for SS6000 devices has an area on the right side of the view for chassis power supply and fan information. Currently no information shows in these boxes. The appropriate methods need to be updated to include appropriate instance information during the reads.

The view of the SmartSwitch 6000 backplane does not show the backplane ports (b1, b2, b3, b4, b5) correctly. The ports are not shown in numerical order; at times they show up in random order. The problem is an array indexing problem. A new default type was created, and all interfaces read from the OID table are automatically added to the list, effectively putting the HostPort interface at the end of the list. This takes care of the array indexing issue for the SS6000 devices.

After moving a card in the 9000 chassis to another chassis the new inb and chassis are not being created.

When a 9000 (MMACPlus) board is removed from the chassis and then reinserted, its System Up Time is reset to zero. Spectrum detects this and attempts to reconfigure. If the board was moved from one slot in a chassis to a different slot in the same chassis, this is correctly identified, and the DevTop and Chassis Device views etc. are repainted with the board in the new slot location.

However, if a board is moved from one chassis to a different chassis, Spectrum is not detecting this. If a board is moved from slot 5 in chassis 1 to slot 10 in chassis 2, Spectrum incorrectly thinks the board is now in slot 10 (good) of chassis 1. It doesn't create a model for chassis 2, or the INB of chassis 2, etc.

(Also refer to the Notes on corrected anomalies, on Page 5-12.)

SPECTRUM_5.0rev1.P50

The 3Com SuperStack II FMS Token Ring Hub has extra ports supported in its MIB called the Router, RingIn, RingOut and Cascade ports. These are in a different table from the standard ports. Support is required for these extra ports so that they can be displayed properly in the Device and DevTop Chassis Views. The resolution was to add the GIB files and database changes that were required.

AutoDiscovery is not fully supported in the current module. The 3Com FMS Token Ring Hub has extra ports in addition to its normal repeater ports. There are 4 types of ports of which there can normally be up to one of each on a stackable hub unit. These are the Router, RingIn, RingOut and Cascade ports. Currently the Router port is the only one which can contain MAC Address information. This port is currently unsupported in AutoDiscovery. The resolution was to create the necessary inference handler to support the Router port.

When AutoDiscovery runs on the 3Com SuperStack II from the Universe view a Hub3ComSSTR_A is properly created. There are a few evident problems that occur.

1. The 3ComTRChassisApp is placed in a Network container. There is no devtop for this model to show connections.

2. Also during the discovery MAC addresses are found and connected to the device. These are incorrectly modeled as Physical_Addr. The Hub3ComSSTR_A should get placed in an 802_5 LAN container.

The resolution is that a new inference handler has been written to handle the AutoDiscovery issue and the database attributes have been modified so that the device will be placed in the correct container.

(Also refer to the Notes on corrected anomalies, on Page 5-12.)

SPECTRUM_5.0rev1.P51

After installing P41. Problems occurred with the HubCat5000 models. Device/Chassis view is blank. DevTop/Chassis menu option is grayed out. DevTop/Interface view gives `Device not configured` error. The problem is that during the board creation phase, CsIHChasMgr attempts to read boardType_Map from the CATStackApp model type. It uses CsULMapper::buildMap to create a map, and buildmap does not recognize Enum, just ENUM. The resolution is to change the attribute from Enum to ENUM.

After setting the db flag for the following external attributes: ifType, ifSpeed, and ifPhysAddress, the DEVTOP view for Cisco Routers become unusable. The Inference Handler which reads these attributes to create the port models uses the default read mode of "Most Available". Setting the database flags on these 3 attributes causes the read to get the attribute values from the database. This causes the read to return an empty value for those attributes and the ports never get created. Only with "Read Most Current" will the read attempt to get the values from the device. The resolution to the problem is to change the Inference Handler to use the "Read Most Current" mode which causes the read to get the attribute values from the device even if the attributes have their db flag set.

The SpectroSERVER, ArchMgr and LocServer processes all grow in memory usage when running in the distributed environment. This may be caused by bringing up two SpectroGRAPHs on the same display. The resolution is to have the map manager (which is a component in the SpectroSERVER, LocServer, and ArchMgr) stop processing map updates for Z minutes once a map storm is detected. The criteria for detecting a map storm is to receive X amount of map updates in Y seconds. X, Y, and Z are configurable.

Purify detected a memory leak in CSIHLostAndFound. The resolution is remove the leak as needed.

BRGMAP hangs and is using 95%+ cpu. For each port on each bridge in the LAN, there is a method that determines potential connections to other ports on other bridges in the LAN using two techniques. The first technique creates a "potential" connection if both ports' SAT tables know about each other. The second technique creates a "potential" connection if (although none of Bridge B's ports SAT tables know about Bridge A) Bridge A's Port 1 SAT table knows

about Bridge B and at least one of Bridge B's Ports hears the same devices that Bridge A's ports (other than Port 1) hear. Apparently, this second technique was added when technique 1 did not work with a certain Cisco device even though the Cisco device was connected. The resolution to the current MR is to NOT run the second technique if the bridge is in a SS6000 chassis.

The problem of not being able to create a LAN model off a SONET interface (by manual configuration) has been corrected. The resolution was to create an attribute off the VNM model called IfTypeList and to allow un-numbered interfaces be processed normally once the new model was configured.

In the CSIIfPort Model Information view, the Banner's Interface Type label shows ??? instead of the correct Enumeration. This has been resolved by modifying the GIB file to display the entire Interface Type.

In SPECTRUM 5.0, we introduced a new service called "Automatic Contact Lost Model Destruction" which will destroy any device model which has been down (i.e. CONTACT_STATUS is LOST) for longer than a specified amount of time. This time interval can be modified in the Fault Isolation model's Model Information View accessed via the VNM's Performance View. The problem is that the GIB field for the time attribute is of an incorrect type. The GIB field is for an unsigned integer, but the attribute is of type Time Ticks. This causes the following error to be displayed when trying to modify the attribute' s value in the GIB: "Update failed for the following attributes: Attribute 0x11fa9 - Attribute wrong type, 0x2000002". This has been resolved by changing the type to Time Ticks.

In the Model Information View for Lost & Found, there is a button for next model destruction time. The button lists the day, date, and time of the next automatic model destruction. In 5.0rev1 with CS1 and MMS1 installed, the date isn't displayed correctly. The day of the month is missing. This has been resolved by adding the day of the month.

The Interface Description Map on the HubCat models cannot be resized. This has been resolved by increasing the size of the GIB when it is displayed.

The values in SW_Link performance view all say "failed." The performance view for the monitor point, which is an ATMIfPort, has values of "failed" as well. The attributes being used for those fields -- InLoad, OutLoad, InCellRate, OutCellRate, and ErrorCellRate, are all red-boxed in the attribute browser. Since the SW_Link can use different types of models as its monitor point, an additional string field was added to the inference handler to send along with the action. The port that picks up the action will compare with the string to find what attribute it needs to read, and then will supply the attribute ID for the correct corresponding attributes (i.e. if it is an ATMIfPort, and it receives the string "In_Load" it will read its appropriate In_Load statistic, whose ID will be supplied by its own IH). This is necessary because the SW_Link code has SwitchApp statistics hard-coded, and obviously you can't read the SwitchApp model's statistics on an ATMIfPort.

When modeling a cisco router with ISDN interfaces, the interfaces are constantly going up and down. This is resulting in the device sending a trap for each occurrence. When the trap is received, SPECTRUM generates a red alarm for each port that goes down. For the ISDN interfaces this is a normal state and the ports should not show an alarm status. The inference handler that is managing the incoming trap has been changed to create just an event, in addition to the all or nothing option now available. To do this another attribute (AlarmOnLinkDnTrap) has been introduced. This attribute allows or disallows the alarm being created after the event is created. The default state of an ISDN interface, either modeled as a Serial_IF_Port or as a new ISDN port, is that events are logged on port linkUp and linkDown but alarms are not generated.

The Cisco Route Switch Module, RSM, is a board that installs into a Catalyst hub. It has no ports out of its front panel and the only connection which it has to the backplane is a virtual connection. This board is modeled separately with the Rtr_Cisco MM. After modeling an RSM and navigating to the DevTop view the only thing that is displayed is the Rtr_Cisco icon in the upper right hand corner. What is expected is a cable walk as well. By default in version 5.0rev1, create sub-interfaces are set to false. For the cable walk to appear in the DevTop view you must change the "Create Sub-Interfaces?" selection from false to true and then reconfigure. This has been resolved by changing the default value for Create_Sub_Interfaces to TRUE.

WA_Link monitor points are lost if one of the routers on either side is rebooted. The problem is that the intelligence which finds and maintains the monitor point for the container (in this case a WA_Link) has not been designed to handle the case where all potential monitor points which the container could use go down, i.e Contact_Status goes LOST. When Contact_Status goes LOST, the intelligence clears out all monitor point information for the container and should start watching the CONTACT_STATUS of the currently selected monitor point. The problem is that the setup of the watch is triggered by a write to the LAN_SELECT_MP attribute for which we currently only trigger by changes in the attribute, i.e. a new monitor point is selected. A situation can arise where the same monitor point is written to the attribute, thus causing the trigger to not go off. When this happens, we are not watching any potential monitor point to see when it may regain contact.

CiscoView will not launch since we do not pass the community name parameter. This has been resolved by adding the community name parameter.

The Performance view of Cisco Rtr HSSI interface is not showing Error_Rate, Discard_Rate, or Packet_Rate. The problem is that the value that is being stored into the attribute "Total_Packets" is larger than a 32 bit Integer. So the overflow on the attribute crashes the calculation which causes a failure to be displayed in the Serial_IF_Port Performance View. This has been resolved by changing the attribute "Total_Packets" from an integer to a counter.

Customer has Cisco Routers in their network that are utilizing Un Number IP. When the customer Runs an ADISC, Model By IP (with discover connection), or even a discover LAN, WA_Links are not being created on the

Serial Interfaces. This has been resolved by creating the WA_Link regardless of whether the nexthop device was modeled or not.

Annotated text moves across the SpectroGRAPH view to the right (approx 1 to 2 pixels) each time a model is created or destroyed. Zooming the annotations causes X,Y coordinates to be changed, which causes this problem.

Open the Device Chassis View of a 6E122-26, then select the field "Physical" of a board and open the Icon Subview Port Display Form. You are able to switch from Operational Status to Duplex Mode but you cannot switch back to Operational Mode again. The same behavior exists when you switch to Speed and then back to Operational Mode. This has been resolved by allowing the user to switch back to Operational Mode.

After deriving a model type from Rtr_Cisco, adding some attributes, and creating an instance of the new model type, it was found that the intelligence attached to the Rtr_Cisco model (e.g. Action Buttons in the Configuration-> Net/Host Configuration View) were non-functional (returning the error Error = Not Implemented,0x2). This has been resolved by fixing the if conditions in the MI file for all the intel on Cisco Routers.

After doing an in-place migration of 4.0rev3 to 5.0rev0, you are unable to see statistics dating prior to the 5.0rev0 installation. The events converted fine and they could be seen dating prior to the 5.0rev0 installation. This is caused by an error in the Statistics migration component of ddm_load. Because of the format of the old 4.0rev3 saves, we must use heuristics to try to match the data from the various save files. In particular, we read through the DDMSAVE_stat_attr_data file to get model/attr handle combinations and their associated data, then we read in the DDMSAVE_stat_time_data file, looking for a match on the model/attr handle to read the compressed time nodes that correspond to the data. The error lies the fact that if for some reason there are no compressed time nodes for a model/attr, then we read past all of the time nodes looking for a match, and we never reset the file pointer. Also, we never read another time node to try to match it with the subsequent model/attr handle data nodes. This has been resolved by changing ddm_load to allow for loading of the rest of the time nodes.

SpectroSERVER cores after the copyright screen appears. This was caused when the VGE interface was installed; the Solaris kernel stat structure added 64 other interfaces. There is a hard-coded limit of 16 interfaces in SPECTRUM. This has been resolved by implementing a check in the code that determines how many interfaces there are so it won't exceed the limit.

After starting the SpectroSERVER and SpectroGRAPH and setting up a Background Discovery, if you restart the SERVER for any reason, the Background Discovery will no longer run at the previously scheduled intervals. You have to reset the Background Discovery in order for it to start running again. This has been resolved by changing Background Discovery to only reset every time the SpectroSERVER is shut down.

Customer states that, under 4.0Rev3, although the SNMP get packet that was issued on behalf of an active GIB view did exceed the max length that his

agent was capable of handling, the DCM did successfully process all of the data:

1. Through an arbitration type process the DCM removed attributes that were roughly equal to 25% of the total packet size during each iteration, until it finally sent a packet that was small enough to be processed by the Liebert Agent.
2. The remaining attributes were then packed into subsequent packets and sent to the agent for processing.
3. The successful packets were reused by the DCM, rather than having to repeat the arbitration process for each refresh cycle of the GIB.

When moving to 5.0 the customer has reported that the way in which the DCM processes packets which are too large for the agent has changed markedly:

1. The arbitration process uses a ~10% reduction factor in each iteration.
2. The remaining attributes are dropped and not resent.

This has been resolved by restoring the old behavior.

Support has been added for the Catalyst wsx5030 board.

A memory leak occurs on every poll of a port's Internal_Link_Status when LivePipes is turned on. The default polling interval is 1 minute for each port in the database with Live Pipes enabled, which can become a severe memory issue for customers who use LivePipes.

Bringing up the I/O Statistics View from the VNM Performance View causes the following errors to appear in the VNM.OUT:

Cs_get_diskio: kstat_read: No such device or address

Cs_get_diskio: kstat_read: No such device or address

Cs_get_diskio: kstat_read: No such device or address

Solaris 2.6 and beyond allows finer granularity of performance statistics on disks. Two things can happen, both of which are unnecessary. Items can be subdivided into partitions, and the software can try to collect information on NFS mounted directories. This does not stop the information from being collected; it just places a message into the VNM.OUT every 10 seconds while the I/O Statistics GIB is open. This has been resolved by checking to make sure that the disk is an actual disk and not a partition or NFS mount point.

Devices are being destroyed because the device has been down (Contact_Status is Lost) for longer than the specified destruction delay of 604800 seconds. This feature is disabled for the customer and the models are still being destroyed. During a VNM restart, the intelligence checks to see if the model has its CONTACT_STATUS set to LOST. If so, we register a timer to start timing the amount of time the model has been lost without first checking to see if this "automatic contact lost model destruction" service is enabled. This has been resolved by adding the check.

In SPECTRUM 5.0 and beyond, we do not examine the state of the connected ports during a WA_Link's Fault Isolation process. We simply look at the status of the connected devices. If both devices are up, then the WA_Link will be GREEN. This causes problems when the VNM has a redundant connection to the remote device. When the wide area connection goes down, the VNM will have a second way to contact the remote device, thus we won't lose contact with it. This results in no alarms even though the WA_Link went down. In 4.0rev3, WA_Links used to monitor the status of the connected ports and generate an ORANGE "Probable Link Failure" alarm when one of the ports went down. This patch adds this type of functionality back in for WA_Links.

When modeling a HubCat 5500 device, the SpectoGRAPH crashes when opening the Configuration View. This was resolved by modifying the GIB view to prevent the crash.

On startup, the SpectroSERVER randomizes the first poll for all devices over a fixed ten minute period. While this works well to distribute the load when polling and logging are at the Spectrum defaults, it does not work well on very large databases where the polling interval has been extended beyond ten minutes. This results in a very cyclic SpectroSERVER workload, and decreases overall capacity and response time. A .vnmrc entry can be added to allow the randomization period to be set. This entry is: mdl_act_dist_factor.

The Archive Manager is crashing and producing a core file. This is caused by a double-delete occurring when running a Data Export when the user no longer has permission to access a model. This has been resolved by deleting the memory correctly.

ArchMgr uses up to 100% of the CPU and will continue to do so until the process is killed. It appears that we have found a hole in the 5.0rev1 CsMgrClientList, where the client_list member can schedule during list manipulation, which can allow the list to become corrupt. This can then cause core dumps or 100% CPU usage due to an infinite loop. This has been resolved by preventing the client_list member from scheduling during list manipulation.

Going into the devtop of a BRtrCSIEMM_E6 causes the SpectroGRAPH to core dump. This was caused when changes were made to correct swbug011329; not all files needed to fully complete this change were included in P34.

An EPI agent can send an unsolicited message to Spectrum in the form of an attribute change. There is currently no means for logging when these attribute changes occur. A new attribute called Log_Attr_Changes of type Integer has been added to the EpiPif model type. This attribute will maintain 3 valid values. 0 = no logging, 1 = log all changes, and 2 = log only when the value of the attribute changes.

Purify reports a memory leak in adisc. The memory allocated for conn_DTEs should be freed.

Recently while working on the PatrolView integration, a problem was discovered relating to icon arrangement. Several of the PatrolView model

types were derived from the Composite model type. Unfortunately this resulted in some incorrect fault isolation behavior. After removing Composite as a base model type, it was found in several views that the PatrolView icons were not displayed correctly. By removing Composite, which does the arranging, CsIHVIB was no longer attached. Since PatrolView is a 3rd Party product, there is no access to this core IH. To resolve this, a new model type has been created from which 3rd Party model types can be derived. CsIHVIB can then be attached to this new model type so that the 3rd party products can take advantage of the functionality.

For epapi, the port to NT introduced the "sigaction_thread()" function, which runs on its own native NT thread upon call to EPI_fcntl(). This function is implemented to always synchronize with the Cs_EPI_pause() method, to be called from the application thread. Unfortunately, this implementation changes the EPI interface, now requiring that Cs_EPI_pause() be called in order for ANY IO notification to occur. There is unnecessary code introduced by the port which actually causes a segv for large messages. This has been resolved by removing the EPIAcceptEvent from sigaction_thread and Cs_EPI_pause. This will allow true async IO notification from epi. This has also been resolved by removing the unnecessary code that introduced the segv for large messages.

Support has been added for the Catalyst wsx5201r and wsx5225r boards.

After upgrading from 4.0rev3 to 5.0rev0, you can no longer view or convert 40rev3 statistics with the 5.0rev0 version of ddm_load. After doing the upgrade, if you use ddm_load to reload the 4.0rev3 StatDb from a ddmsavefile then use the SDE application, the common attributes only show the "0x0" for available data. Using the Reports application you will see an available range for data prior to the installation of 5.0rev0, yet when you run a statistical report for a router the report indicates "Completed Successfully - No Records Found". The problem is that the 4.0rev3 DDM saves do not include Attribute names or types. Because of this, we don't create the AttrDict records in the new DDM database, as part of the migration load. This has been resolved by writing a tool that can be run after migrating from 4.rev3 to 5.0rev1, that will update the DDM database with all the relevant Attribute data from a running SpectroSERVER.

If an application sets the instance name member of the CsDataList object, the memory never gets reclaimed. This results in a memory leak. This has been resolved by writing a destructor to reclaim the memory.

Connection Manager in the Alarm Manager reports a DOWN connection for the View Service, incorrectly. This inhibits the ability to navigate to device from the Alarm Manager when need be, because the Connection Manager is reporting a DOWN connection. The resolution to this problem does not change the view service advertisement when a SpectroGRAPH is brought down with one already running, but prevents map storms from freezing up SPECTRUM's processes.

(Also refer to the Notes on corrected anomalies, on Page 5-12.)

Chapter 6

Files Shipped With CS2

This chapter lists the SPECTRUM files that are shipped with the CS2 software.

The CS2 software includes the following deliverable files listed by Management Module.

AutoDiscovery Support (adisc)

SS/CsIHIfTypeL.o

SS/CsIHBkgrdDis.o

SS/CsIHTblDisc.o

SS/CsIHRtrMap.o

SS/CsIHRtrDisc.o

SS/CsIHVerByIP.o

SS/CsTVIBMI.o

SS/ADIfType.o

AutoDiscovery (adisc_opt)

SG-Tools/ARTDISC

SG-Tools/BRGMAP

SG-Tools/HUBMAP

SG-Tools/RTRDISC

SG-Tools/autodisc

adisc_opt.cus

Alarm Manager Application (alarm)

SG-Support/CsExtProcess/AlarmView

SG-Support/CsResource/language/alarm.default

SG-Support/CsHelp/AlarmView/default/findinfo/info.htm

SG-Support/CsHelp/AlarmView/default/images/infopanl.gif

SG-Support/CsHelp/AlarmView/default/images/prefer3.gif

SG-Support/CsHelp/AlarmView/default/settings/pref.htm

Alarm Manager Application (SA-CSI1011)

SG-Support/CsExtProcess/AlarmViewSL

SG-Support/CsResource/alarm.default

SG-Support/CsHelp/AlarmViewSL/default/findinfo/info.htm

SG-Support/CsHelp/AlarmViewSL/default/images/infopanl.gif

SG-Support/CsHelp/AlarmViewSL/default/images/prefer3.gif

SG-Support/CsHelp/AlarmViewSL/default/settings/pref.htm

Enterprise Alarm Manager Application (SA-CSI1012)

SG-Support/CsExtProcess/AlarmView

SG-Support/CsHelp/AlarmView/default/findinfo/info.htm

SG-Support/CsHelp/AlarmView/default/images/infopanl.gif

SG-Support/CsHelp/AlarmView/default/images/prefer3.gif

SG-Support/CsHelp/AlarmView/default/settings/pref.htm

Web Alarm View Application (SA-CSI1018)

WEB/AlarmWeb/AlarmWeb

SG-Support/CsResource/language/wav.default

Command Line Interface (cmdproc)

vnmsh/VnmShd

vnmsh/.vnmshrc

vnmsh/connect

vnmsh/create

vnmsh/destroy

cmdproc.cus

SPECTRUM Client/Server View (cview)

SG-Support/CsScript/ClientView

SPECTRUM Client/Server View (SA-CSI1017)

SG-Support/CsScript/ClientView

Data Export (datex)

SG-Tools/SDE

SG-Tools/dataexp

SG-Tools/SDEIngImport

SG-Tools/SDESybImport

SG-Tools/SDEOraImport

SG-Tools/dtxscript.tpl

datex.cus

SG-Tools/SDESqlServerImport (Windows_NT only)

Distributed Data Manager (ddm)

SS/DDM/ddm_load

SS/DDM/ddm_save

SS/DDM/ddm_AttrDict

SS/DDM/ArchMgr

Enterprise Configuration Manager for SPRM (ecmsprm)

ecm/Ecm

ecm/CISCO_MTYPES

ecm/bckgrnd/ecmbg

ecm/bckgrnd/ecmbgscript

ecm/bckgrnd/export

ecm/bckgrnd/import

SG-Support/CsEvFormat/Event00820012

SG-Tools/appdef/Ecm

SS-Tools/dbpart1/CsvScmAtrVL.o

ecmsprm.cus

External Protocol Int API (epapi)

SDK/lib/libEPapi.a

EPI Support (SMEPI-CSI)

SS/SMEPI-CSI.e

SS/CsIHEpiPIf.o

Event Log Application (event)

SG-Support/CsExtProcess/EventLog

SpectroGRAPH Support (SG-Support)

SG-Support/CsGib/LostFound/CsStandard.30

SG-Support/CsGib/FaultIsolation/CsPerform.30

SG-Support/CsGib/LivePipes/CsPerform.30

SG-Support/CsGib/LivePipes/CsStandard.30

SG-Support/CsEvFormat/Event00010017

SG-Support/CsEvFormat/Event0001030a

SG-Support/CsEvFormat/Event0001060d

SG-Support/CsEvFormat/Event00010701

SG-Support/CsEvFormat/Event00010702

SG-Support/CsEvFormat/Event00010706

SG-Support/CsEvFormat/Event00010d17

SG-Support/CsEvFormat/Event00010d18

SG-Support/CsEvFormat/Event00010d19

SG-Support/CsPCause/Prob00010003

SG-Support/CsPCause/Prob00010410

SG-Support/CsPCause/Prob00010411

Generic View (genv)

SG/CsIGSecTxt.o

SG/CsMltGphAbs.o

SG/CsIGMngNbor.o

Common External Files Support (SM-GEXT)

SG-Support/CsIib/Ds3App1407/Ds3App.AIBase

SG-Support/CsGib/Ds3App1407/CsDs3CfgGTb.30

SG-Support/CsGib/Ds3App1407/CsDs3Config.30

SG-Support/CsGib/Ds3App1407/CsDs3Confg.GTb

SG-Support/CsGib/Ds3App1407/CsDs3Curr.30

SG-Support/CsGib/Ds3App1407/CsDs3Curr.GTb

SG-Support/CsGib/Ds3App1407/CsDs3Intv.30

SG-Support/CsGib/Ds3App1407/CsDs3Intv.GTb

SG-Support/CsGib/Ds3App1407/CsDs3Totl.30

SG-Support/CsGib/Ds3App1407/CsDs3Totl.GTb

SG-Support/CsGib/Ds3App1407/CsStandard.30

SG-Tools/pib/SM-GEXT.p

SS/SM-GEXT.e

SS/CsEGP1AppMI.o

SS/CsEGP2AppMI.o

SS/CsICMPAppMI.o

SS/CsIP1AppMI.o

SS/CsSNMP1AgMI.o

SS/CsSNMP2AgMI.o

SS/CsTCP1AppMI.o

SS/CsTCP2AppMI.o

SS/CsUDP1AppMI.o

SS/CsUDP2AppMI.o

SS/CsTRAppMI.o

SS/CsEthAppMI.o

SS/CsEtIfAppMI.o

SS/CsTRIfAppMI.o

SS/CsDTRAppMI.o

SS/CsDTRIfApMI.o

Common Bridge Support (SM-GNBDG)

SG-Support/CsGib/GenBridgePort/CsStandard.30

SG-Support/CsGib/GenBridgePort/CsTrapConf.30

SS/CsGBdgAppMI.o

Common Management Module Support (SM-COMMAN)

SG/CsGoInsNW.o

SG/CsRdAttInNW.o

SG-Support/Enumerations/iftype.txt

SS/V3COREMM-CSI.e

SS/CsColFddiMI.o

SS/CsIHIfStat.o

SS/CsIHColFddi.o

SS/CsIHSyncRd.o

Generic Routing Support (SM-GNRTR1)

SG-Support/CsGib/FrameRelayPort/CsStandard.30

SG-Support/CsGib/FrameRelayPort/CsTrapConf.30

SG-Support/CsGib/Gen_IF_Port/CsStandard.30

SG-Support/CsGib/Gen_IF_Port/CsTrapConf.30

SG-Support/CsGib/Serial_IF_Port/CsStandard.30

SG-Support/CsGib/Serial_IF_Port/CsTrapConf.30

SG-Support/CsPCause/Prob00220006

SS/SMGRTR-CSI.e

SS/CsIHDLnkTrp.o

SS/CsIHRtrSum.o

SS/CsIHIpRoute.o

SS/CsATAppMI.o

SS/CsGSnmpRMI.o

SS/CsGenIFMI.o

SS/CsIPAppMI.o

SS/CsRtrAppMI.o

Generic SNMP Device (SM-CSI1017)

SG-Support/CsGib/GnSNMPDev/CsFIConfig.30

SG-Support/CsGib/GnSNMPDev/CsRdndOpt.30

SG-Support/CsIib/GnSNMPDev/Large.Bas

SG-Support/CsIib/GnSNMPDev/Small.Bas

SG/CsDynImage.o

SS/CsIHChasCtl.o

SS/CsIHChasSup.o

SS/CsPortGroup.o

Global Classes API (globl)

SDK/lib/libGlobl.a

Global Classess API (WIN32 / globl32)

SDK/lib/lib/Globl.a

Core Icon Objects (icon)

SG/CsIAniMult.o

SG/CsIAck.o

SG/CsIDiag.o

IcmpPif (Windows_NT only)

SS/CsICMPServ.o

Inference Handler API (ihapi)

SDK/lib/libIHapi.a

Extensions Integration Toolkit (insdk)

INSDK/Install.tar

INSDK/mkarea

MAC Address Locator Tool (malt)

SG-Tools/MALT

SG-Tools/SSMALT

Map View (mapv)

SG/CsPLLServer.o

Patch Installation Support (Install)

installgui

install_engine

mmml

Install-Tools/CsCustom

Install-Tools/cpanel.cus

Install-Tools/gzip

Install-Tools/host_eval

Install-Tools/host_eval.dat

Install-Tools/locserv.cus

Install-Tools/phaselist

Install-Tools/processd.cus

Install-Tools/release.dat

Install-Tools/patch/tools/patch_inst

Install-Tools/patch/tools/patch_prep

Install-Tools/setup.ksh

Install-Tools/MMD/Install.mmd

SDPM/new/processd

SDPM/new/.autostartrc

LS/LocServer

Portability Library (PortLib)

SDK/lib/libPort.a

Portability Library (WIN32 / PortLib32)

WIN32SDK/lib/libPort.a

Report Generator (rprts)

SG/Graphrpt

SG/Alarms

SG/BGArcRpt

SG/EventAR

SG/Inventory

SG/UpDownAR

SG/ReportsUI

SG/lprps

SG/RepGRFtogif

SG/rptscript

SG-Tools/RibE

SANM Developer's Toolkit (sanmtk)

SANMTK/lib/libGlobl.a

SANMTK/lib/libPort.a

SANMTK/lib/sanmtk.a

Alarm Notification Manager (sanm)

SANM/PolicyAdmin

SANM/associate

SANM/xcron

AlarmNotifier (Notifier)

Notifier/AlarmNotifier

Notifier/AlarmAck

Notifier/AlarmClear

SNMP Device (SMSNP-CSI)

SS/SMSNP-CSI.e

SS/CsSV1Ident.o

SS/CsSnmpV1PIf.o

SpectroGRAPH (SG-Core)

SG/SG.o

SG/libUIapi.a

SG/libVPapi.a

SG/libGlobl.a

SG/libPort.a

SG-Tools/stdmenu/salt_stdmenu

SG-Tools/SALT

ndlib/salt.dat

AR System Gateway (spars)

ars_gateway/arsgated

mibtoolsnt

mibtools/bin/msjet35.dll (Windows_NT only)

SpectroSERVER (CORE)

SS/SS.o

SS/core.e

SS/libEPI.a

SS/libIHapi.a

SS/libVPapi.a

SS/libGlobl.a

SS/libPort.a

Remote Object Encapsulation (ssroe_core)

SG-Tools/reconfig

SG-Tools/hierarchy

SG-Tools/reconfig.txt

SG-Tools/hierarchy.txt

SG-Support/CsResource/language/ssroe.default

Event/Alarm Configuration Editor (steae)

SG-Support/CsExtProcess/ECEditor

SG-Support/CsResource/language/steae.default

User Interface Common Objects (uiapi)

SG/libUIapi.a

SG-Support/CsScript/CsPrint

SG-Support/CsScript/CsXwdPrint

SG-Support/CsScript/CsXwdToPcl

SG-Support/CsScript/CsXwdToPs

SG-Support/CsScript/CsXwdToXwd

Core User Editor (usred)

SG-Support/CsScript/UserEditor

User Editor (SA-CSI1013)

SG-Support/CsScript/UserEditor

VnmParmBlock API (vpapi)

SDK/include/VPAPI/CsActionCode.h

SDK/include/VPAPI/CsAlarmCause.h

SDK/include/VPAPI/CsAttrValDef.h

SDK/include/VPAPI/CsEventTypes.h

SDK/include/VPAPI/CsRelDef.h

SDK/include/VPAPI/CsRHLst.h

SDK/lib/libVPapi.a

VnmParmBlock API (WIN32 / vpapi)

WIN32SDK/include/VPAPI/CsActionCode.h

WIN32SDK/include/VPAPI/CsAlarmCause.h

WIN32SDK/include/VPAPI/CsAttrValDef.h

WIN32SDK/include/VPAPI/CsEventTypes.h

WIN32SDK/include/VPAPI/CsRelDef.h

WIN32SDK/include/VPAPI/CsRHLst.h

WIN32SDK/lib/libVPapi.a

SpectroWATCH UI (watch)

SG-Tools/WatchManager

SG-Tools/WatchEditor

SpectroWATCH IH (watch-ih)

SS/SwLoopDetct.o

SS/SwIHControl.o

SS/SwIHEval.o

SS/SwIHEval2.o

SS/SwCallComp.o

SS/SwInstInfo.o

SS/SwInstInfoL.o

SS/SwIntDesc.o

SS/SwUIDesc.o

SS/CsInterp.o

SS/CsIobject.o

SS/CsIobjectL.o

SS/CsIops.o

SS/CsIstack.o

SS/CsIvnmops.o

SS/SwYacc.o